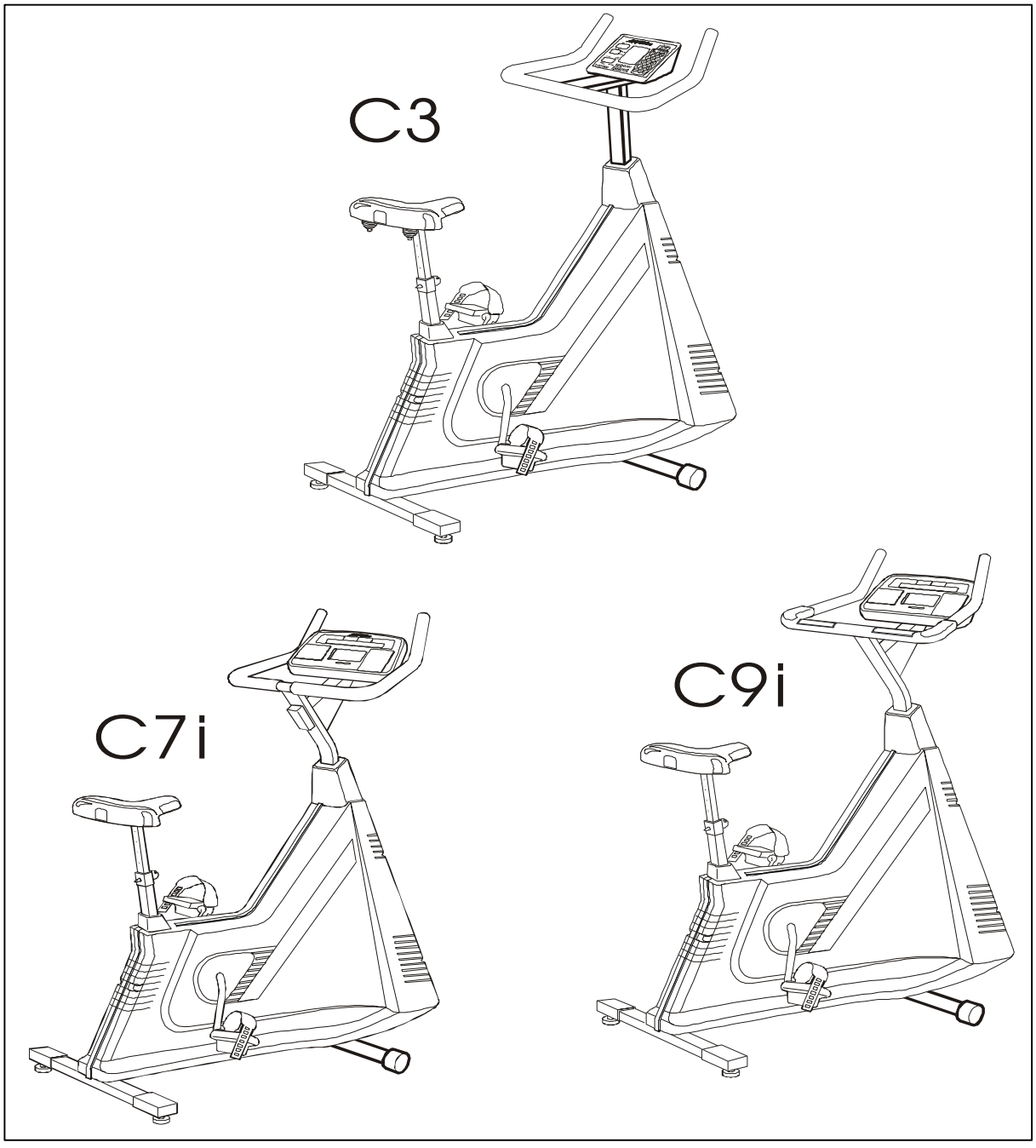
LifeFitness
Rely on it.™

Lifecycle® C3 / C7i / C9i Belt Drive Series Exercise Bikes



Customer Support Services

SERVICE MANUAL

Lifecycle C3, C7i, C9i Upright Exercise Bikes

INTRODUCTION

This Service Manual applies to the following Lifecycle® belt drive products:

1. Model C3
2. Model C7i with Polar®
3. Model C9i with Lifepulse™

This Service Manual consists of six (6) Sections. They are:

TABLE OF CONTENTS

Section I
- ❑ TROUBLESHOOTING

Section II
- ❑ DIAGNOSTICS C3 C7 C9

Section III
- ❑ "How To..."

Section IV
- ❑ ELECTRONICS
- ❑ WIRING DIAGRAMS

Section V
- ❑ PARTS

Section Vi
- ❑ MISCELLANEOUS

To speed Life Fitness Customer Support Services response time, please provide the following information.

1. Model number
2. Serial number
3. Symptom of problem
4. Part name and number to order (if known)

LIFEFITNESS COMPANY
CUSTOMER SUPPORT SERVICES

Lifecycle C3, C7i, C9i Upright Exercise Bikes
THEORY OF OPERATION

The Lifecycles bikes are stationary exercise bicycles that provide a scientific method of improving body fitness and endurance through its unique “12 or 24 MINUTE RIDE TO VIGOROUS HEALTH.”

Computerized state-of-the-art electronics have been engineered to satisfy a range of personalized fitness needs of the beginner to the needs of the most advanced fitness enthusiast.

The Lifecycle concept is based on the self-motivational principle of INTERVAL TRAINING WITH PROGRESSIVE OVERLOAD. During the HILL and RANDOM exercise programs, the workload against which you are pedaling is periodically changed by the built-in computer resulting in an automatic increase or decrease in pedal resistance. This simulates riding up and down virtual “hills,” which are visualized on the display console with columns of “lights” that move from right to left.

With features like the RACE program, Fit Test, level 0 resistance - almost 25% easier than the level 1 found on earlier editions of the classic Lifecycle exercise bike - and exciting variable-ergonomic handlebars, you’ll be much more likely to stick with your exercise plan and accomplish your goals.

The ability to select a program to match your particular needs is what distinguishes Lifecycle bikes as the world’s most popular physical conditioning device. Its user-flexibility means that you will never outgrow the innumerable challenges the Lifecycle exercise bike has to offer.

The beginner starts with basic programs, then improves his level of fitness at his own rate while constantly challenging himself to the next level. For well-conditioned individuals, the advanced programs offer more difficult modes of training. In fact, many world-class athletes use Lifecycle bikes to maintain peak levels of conditioning.

The Lifecycle bike is an extremely rugged exercise bicycle that is designed to withstand heavy use for many years. During its two-year research and development phase, prototype Lifecycles were placed in high-volume health clubs and fitness centers across the United States where they were field tested for up to 18 hours a day.

We look forward to your questions and comments. Please phone, FAX or, write at:

Lifecycle C3, C7i, C9i Upright Exercise Bikes

TABLE OF CONTENTS

SECTION I TROUBLESHOOTING GUIDES **Page**

No Power 2
Display Console Initializes Then Fails 2
Console Resets to default mode at power up 2
Erratic Display Console LEDs 3
Display Console LEDS Remain Illuminated 3
Prompt Persists And Information Entry Not Allowed 4
Prompt Goes Off When Start Key Is Released And Information Entry Not Allowed 4
Display Console Keys Do Not Function 4
Excessive Resistance Load At Start Of Program 5
Excessive Resistance Load During Program 5
Resistance Varies During Manual Program 6
Resistance Constant During Random Or Hill Programs 6
Difficult Or No Pedaling Movement 7
Pedaling Too Easy 7
Battery Over-Heating 8
Bike Not Stable 8
Emitting Load Noise 9
Seat Wobbles 9
Alternator Voltage Test 9
No Heart Rate Or Display Reads No Heart Rate (Lifepulse) 10
Handlebar/Lifepulse Grips Loose 10
No Heart Rate Or Display Reads No Heart Rate (Telemetry) 10
Notes 11

SECTION II-A DIAGNOSTICS
MODEL C3

Diagnostics State 1 - All LEDs And Keypad Test 2
Diagnostics State 2 - Individual LED Test 3
Diagnostics State 3 - Software Version and Jumper Options 5
Notes 6

SECTION II-B DIAGNOSTICS
MODEL C7i

Diagnostics State 1 - All LEDs And Keypad Test 2
Diagnostics State 2 - Individual LED Test 3
Diagnostics State 3 - Version, RPM, HR, and Load Tests 4
Diagnostics State 4 - Lifepulse And Network Status Tests 5
Diagnostics State 5 - Loopback Test 6
Diagnostics State 6 - Maximum Program Duration 7
Diagnostics State 7 - Telemetry Enable/Disable 8
Diagnostics State 8 - English/Metric Units 9
Diagnostics State 9 - Model Selection 10
Diagnostics State 10 - Watts 11
Diagnostics State 11- Mets 12
Diagnostics State 12- Power Supply Configuration 13
Diagnostics State 13 -Total Hours And Statistics 14
Diagnostics State 14 - Numeric Keys Configuration 15
Diagnostics State 15 - Programs Enable/Disable 16
Diagnostics State 16 - Photo Shoot 17
Notes 18

TABLE OF CONTENTS (continued)

SECTION II-C DIAGNOSTICS

MODEL C9i

Diagnostics State 1 - All LEDs And Keypad Test 2
Diagnostics State 2 - Individual LED Test 3
Diagnostics State 3 - Version, RPM, Network Status, Load Tests 4
Diagnostics State 4 - Lifepulse Tests 5
Diagnostics State 5 - CVA Enable/Disable 6
Diagnostics State 6 - Maximum Program Duration 7
Diagnostics State 7 - Telemetry Enable/Disable 8
Diagnostics State 8 - English/Metric Units 9
Diagnostics State 9 - Model Selection 10
Diagnostics State 10 - Watts 11
Diagnostics State 11- Mets 12
Diagnostics State 12- Power Supply Configuration 13
Diagnostics State 13 -Total Hours And Statistics 14
Diagnostics State 14 - Numeric Keys Configuration 15
Diagnostics State 15 - Programs Enable/Disable 16
Diagnostics State 16 - Language Selection 17
Diagnostics State 17 - Message Center EEPROM Test 18
Diagnostics State 18 - Photo Shoot 19
Notes 20

SECTION III HOW TO…

Alternator 2
Alternator Belt 3
Drive Belt 4
Crankarm and Bearings 5
Seat Assembly - Models C7i and C9i 7
Seat Assembly - Model C3 8
Main Wire Harness 9
Battery 10
Display Console 11
Alternator Control Board 12
Foot Strap 13
Front Wheel 14
Handlebar Assembly 15
Digital Heart Rate Sensors 16
Telemetry Receiver 18
Side Shrouds 19
Pedals 20
Seat Pin 21
Stabilizer Bar 22
Notes 23

TABLE OF CONTENTS (continued)

SECTION IV ELECTRONICS OVERVIEW

Display Console Board - Models C7i 2
Display Console Board - Models C9i 4
Alternator Control Board - Model C7i 6
Alternator Control Board (Models C3 and C9i) 7
Alternator 8
Wiring Block Diagram 9
Notes 10

SECTION V PARTS

Model C3 – C3-0100-01 2
Model C7i – C7-0100-01 4
Model C9i – C9-0100-01 6
Notes 8

SECTION VI MISCELLANEOUS

Model Identification And Serial Number Location 2
Preventative Maintainence Tips 3
Communicating By Fax 4
Fax Form 5
Notes 6

SECTION I

TROUBLESHOOTING

TROUBLESHOOTING GUIDE

Malfunction	Probable Cause	Corrective Action
No Power. Display Console LEDs do not illuminate.	Pedaling too slow.	Pedal faster than 45 RPM then press the START button.
	Insufficient battery voltage.	Battery voltage output should be: 9.0 VDC.
	Loose connections at the alternator Power Control Board (PCB) and/or at the Alternator Terminals. Damaged wiring harness.	Make sure that all connections are secure. Remove connectors at the PCB then reconnect, and at the alternator terminals, make sure terminal nuts are tight. Inspect wiring harness for damage. Replace as necessary.
	Malfunctioning Display Console.	Test with known good Display Console. Replace malfunctioning Display Console.
	Malfunctioning Alternator Control Board (ACB).	Test with known good ACB. Replace malfunctioning ACB.
	Malfunctioning Alternator.	Test with known good Alternator. Replace malfunctioning Alternator.
Display Console initializes then fails.	Loose connections at the alternator Power Control Board (PCB) and/or at the Alternator Terminals. Damaged wiring harness.	Make sure that all connections are secure. Remove connectors at the PCB then reconnect, and at the alternator terminals, make sure terminal nuts are tight. Inspect wiring harness for damage. Replace as necessary.
	Malfunctioning Alternator Control Board.	Test with known good Alternator Control Board. Replace malfunctioning board.
	Malfunctioning Alternator.	Test Alternator output or, test with known good Alternator. Replace malfunctioning Alternator.
Console Resets to default mode during power up.	Faulty EEPROM	Run EEPROM test. Refer to diagnostic state 17. If faulty, replace the console.

Malfunction	Probable Cause	Corrective Action
Erratic Display Console LEDs.	Pedaling too slow.	Pedal faster than 45 RPM.
	Insufficient battery voltage.	Battery voltage output should be: 9.0 VDC.
	Loose connections at the alternator Power Control Board (PCB) and/or at the Alternator Terminals. Damaged wiring harness.	Make sure that all connections are secure. Remove connectors at the PCB then reconnect, and at the alternator terminals, make sure terminal nuts are tight. Inspect wiring harness for damage. Replace as necessary.
	Malfunctioning Display Console.	Test with known good Display Console. Replace malfunctioning Display Console.
	Malfunctioning Alternator Control Board.	Test with known good Alternator Control Board. Replace malfunctioning board.
	Malfunctioning Alternator.	Test Alternator output, or test with known good Alternator. Replace malfunctioning Alternator.
Display Console LEDs remain illuminated and do not go OFF in a timely manner at the end of a workout even when the CLEAR key is pressed, or when pedaling stops.	Malfunctioning Display Console.	Inspect for damage or depression at START key. Test with known good Display Console. Replace malfunctioning Display Console.
	Loose connections at the alternator Power Control Board (PCB) and/or at the Alternator Terminals. Damaged wiring harness.	Make sure that all connections are secure. Remove connectors at the PCB then reconnect, and at the alternator terminals, make sure terminal nuts are tight. Inspect wiring harness for damage. Replace as necessary.
	Malfunctioning Alternator Control Board.	Test with known good Alternator Control Board. Replace defective board.

TROUBLESHOOTING GUIDE

Malfunction	Probable Cause	Corrective Action
Prompt persists and information entry not allowed.	Attempting to enter improper duration of time.	Refer to Operation Manual for time duration requirements.
	Malfunctioning Display Console.	Test with known good Display Console. Replace malfunctioning Display Console.
Prompt goes OFF when the START key is released and information entry not allowed.	Malfunctioning Display Console.	Test with know good Display Console. Replace malfunctioning Display Console.
	Malfunctioning Alternator Control Board.	Test with known good ACB. Replace defective Alternator Control Board.
	Malfunctioning Alternator.	Test Alternator output, or test with known good Alternator. Replace malfunctioning Alternator.
Display Console keys (except START key) do not function.	Attempting to enter program not available.	Refer to Operation Manual for program availability.
	Display Console connection loose.	Make sure that the connections at the Display Console are secure. Remove, then reinstall.
	Malfunctioning Display Console.	Test with substitute Display Console. Replace malfunctioning Display Console.
	Numeric keys disabled.	Refer to Diagnostic State 14 to enable numeric keys.

Malfunction	Probable Cause	Corrective Action
Excessive resistance load at start of program.	Pedaling too slow.	Pedal faster than 45 RPM.
	Loose connections at the alternator Power Control Board (PCB) and/or at the Alternator Terminals. Damaged wiring harness.	Make sure that all connections are secure. Remove connectors at the PCB then reconnect, and at the alternator terminals, make sure terminal nuts are tight. Inspect wiring harness for damage. Replace as necessary.
	Malfunctioning Display Console.	Test with known good Display Console. Replace malfunctioning Display Console.
	Malfunctioning Alternator Control Board.	Test with known good Alternator Control Board. Replace malfunctioning board.
	Malfunctioning Alternator.	Test Alternator output, or test with known good Alternator. Replace malfunctioning Alternator.
Excessive resistance load during program.	Pedaling too slow.	Pedal faster than 45 RPM.
	Loose connections at the alternator Power Control Board (PCB) and/or at the Alternator Terminals. Damaged wiring harness.	Make sure that all connections are secure. Remove connectors at the PCB then reconnect, and at the alternator terminals, make sure terminal nuts are tight. Inspect wiring harness for damage. Replace as necessary.
	Malfunctioning Display Console.	Test with known good Display Console. Replace malfunctioning Display Console.
	Malfunctioning Alternator Control Board (ACB).	Test with known good ACB. Replace malfunctioning ACB.
	Malfunctioning Alternator.	Test Alternator output, or test with known good Alternator. Replace malfunctioning Alternator.
	Defective load resistor.	Test with known good resistor. Replace defective resistor.

TROUBLESHOOTING GUIDE

Malfunction	Probable Cause	Corrective Action
Resistance varies during manual program.	Pedaling too slow.	Pedal faster than 45 RPM.
	Loose connections at the alternator Power Control Board (PCB) and/or at the Alternator Terminals. Damaged wiring harness.	Make sure that all connections are secure. Remove connectors at the PCB then reconnect, and at the alternator terminals, make sure terminal nuts are tight. Inspect wiring harness for damage. Replace as necessary.
	Malfunctioning Display Console.	Test with known good Display Console. Replace malfunctioning Display Console.
	Malfunctioning Alternator Control Board.	Test with known good Alternator Control Board. Replace defective board.
	Malfunctioning Alternator.	Test Alternator output, or test with known good Alternator. Replace malfunctioning Alternator.
	Defective load resistor.	Test with known good resistor. Replace defective resistor.
Resistance is constant during random or hill programs.	Loose connections at the alternator Power Control Board (PCB) and/or at the Alternator Terminals. Damaged wiring harness.	Make sure that all connections are secure. Remove connectors at the PCB then reconnect, and at the alternator terminals, make sure terminal nuts are tight. Inspect wiring harness for damage. Replace as necessary.
	Malfunctioning Display Console.	Test with known good Display Console. Replace malfunctioning Display Console.
	Malfunctioning Alternator Control Board.	Test with known good Alternator Control Board. Replace defective board.
	Malfunctioning Alternator.	Test Alternator output, or test with known good Alternator. Replace malfunctioning Alternator.

NOTE: In RANDOM and HILL programs, resistance variation may be normal. Test for resistance variation in MANUAL program.

TROUBLESHOOTING GUIDE

Malfunction	Probable Cause	Corrective Action
Difficult or no pedaling movement.	Malfunctioning Pulley Clutch assembly.	Inspect Pulley for free backward and forward rotation. Replace malfunctioning Pulley.
	Alternator belt excessively tight.	Inspect belt deflection. Adjust as necessary. Alternator belt deflection: 1/4 inch (6mm).
	Left side Crank Nut excessively tight.	Loosen nut 1/16 of a turn.
	Crank Bearings worn or corroded.	Replace Crank Bearings.
	Seat incorrectly adjusted.	Adjust Seat. Refer to Operation Manual.
Pedaling to easy.	Pedaling too slow.	Pedal faster than 45 RPM.
	Loose connections at the alternator Power Control Board (PCB) and/or at the Alternator Terminals. Damaged wiring harness.	Make sure that all connections are secure. Remove connectors at the PCB then reconnect, and at the alternator terminals, make sure terminal nuts are tight. Inspect wiring harness for damage. Replace as necessary.
	Malfunctioning Display Console.	Test with known good Display Console. Replace malfunctioning Display Console.
	Malfunctioning Alternator Control Board.	Test with known good Alternator Control Board. Replace defective board.
	Malfunctioning Alternator.	Test Alternator output, or test with know good Alternator. Replace malfunctioning Alternator.
	Alternator Belt loose.	Adjust Alternator Belt **to** 1/4 inch (6mm) deflection.
	Power grip belt damaged or off crank pulley.	Replace belt if damaged.

TROUBLESHOOTING GUIDE

Malfunction	Probable Cause	Corrective Action
Battery over-heating.	Reverse polarity.	RED wire to positive (+) lead and BLACK wire to negative (-) lead.
	Battery cable insulation worn and contacting frame.	Inspect Wires and replace as necessary.
	Malfunctioning Display Console.	Test with known good Display Console. Replace malfunctioning Display Console.
	Malfunctioning Alternator Control Board.	Test with known good Alternator Control Board. Replace defective board.
	Defective or damaged main wire harness.	Inspect Main wire harness, and replace if necessary.
Bike not stable.	Stabilizer foot pads.	Adjust Foot Pads.
	Floor surface not level.	Position bike on level surface.
	Stabilizer bar not attached firmly to frame.	Tightened hardware.
	Wheel(s) damaged.	Replace damaged wheel(s).
	Frame damaged.	Contact Life Fitness Customer Support Services.

TROUBLESHOOTING GUIDE

Malfunction	Probable Cause	Corrective Action
Emitting loud noise.	Non-carpeted, hard floor.	Place bike on softer surface floor or carpeted area to deaden sound.
	Leaning excessively to either side.	Do not lean.
	Crank bearings not adjusted properly or worn.	Inspect, adjust, and/or replace as necessary.
	Alternator belt loose.	Inspect belt deflection. Adjust the Alternator Belt to 1/4 inch (6mm) deflection.
	Alternator Belt worn.	Replace Belt..
	Malfunctioning Alternator.	While operating the unit, listen for excessive noise from Alternator. Replace Alternator as necessary.
	Free-wheel Pulley not rotating freely.	Inspect Pulley, and replace pulley as necessary.
Seat wobbles.	Seat rollers out of adjustment or excessively worn.	Inspect, adjust, or replace worn rollers as necessary.
Alternator voltage test.	Malfunctioning Alternator.	1. Check the alternator voltage using a DC voltmeter. Attach the positive (+) probe of the voltmeter to the alternator RED lead, and the negative (-) probe of the voltmeter to alternator BLACK lead. 2. Pedal above 45 RPM. 3. Press the START key. 4. Voltmeter reading should be 9-11 VDC.

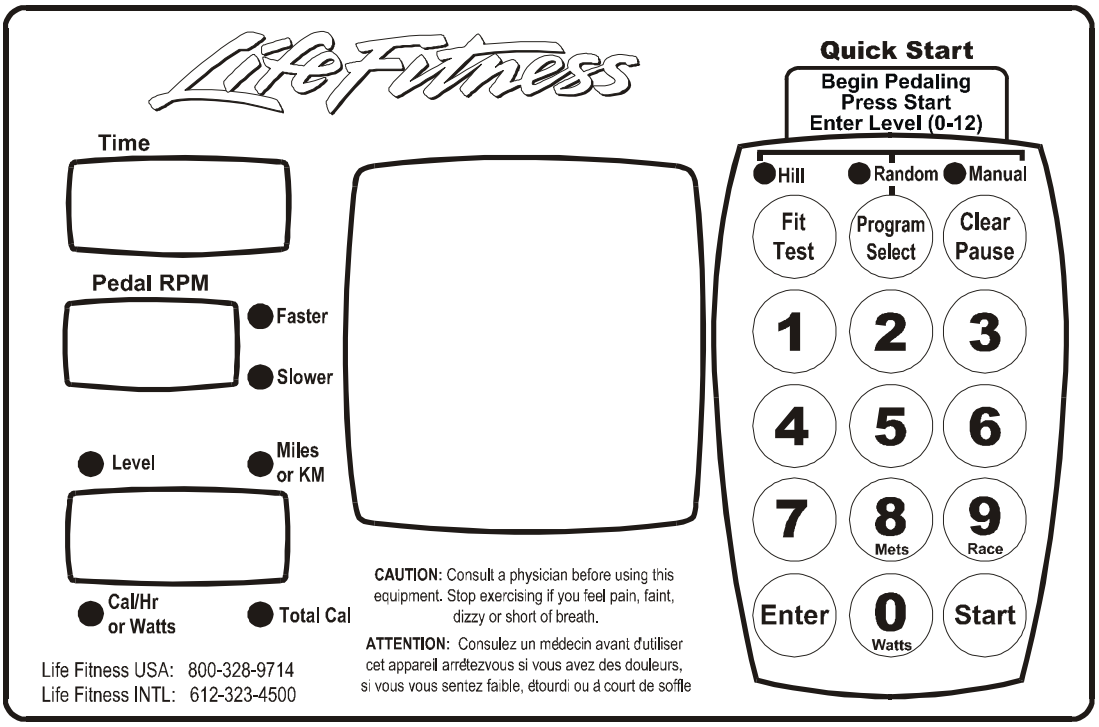
TROUBLESHOOTING GUIDE

Malfunction	Probable Cause	Corrective Action
No heart rate or display reads no heart rate (Lifepulse).	Heart rate digital signal processor (DSP) board.	Verify that the DSP board is communicating. Execute the diagnostic Mode.
	Faulty cable connection.	Verify heart-rate cable is properly connected, then verify for continuity using an ohmmeter.
	Handlebar/Lifepulse Grip Assembly worn or damaged.	Replace Handlebar/Lifepulse Assembly.
	Life Pulse handlebar.	Using an ohmmeter, verify continuity between Lifepulse sensor and cable connection.
	Moisture on Handlebar /Lifepulse Grip Assembly.	Dry wipe sensors.
	Loose or malfunctioning heart rate lead connection at Display Console.	Secure connection. If necessary, replace malfunctioning Handlebar/Lifepulse Grip Assembly.
	Malfunctioning Display Console.	Test with known good Display Console. Replace malfunctioning Display Console.
Handlebar/Lifepulse grips loose.	Excessive wear or damage to grip.	Replace the handlebar assembly.
Lifepulse sensor molding loose.	Improper cleaning solution that contains an acid or ammonia base.	Replace the Lifepulse Sensor Kit.
No heart rate or display reads no heart rate (Telemetry).	No heart rate reading.	Execute Diagnostic Mode to verify performance of heart rate function.
	Faulty cable connection.	Verify Telemetry cable is properly connected.
	Faulty receiver connection.	Verify receiver is plugged into jack properly.
	Defective transmitter (strap).	Test transmitter with a known good unit. Replace strap if necessary.

NOTES:

SECTION II - A

DIAGNOSTICS
Model C3



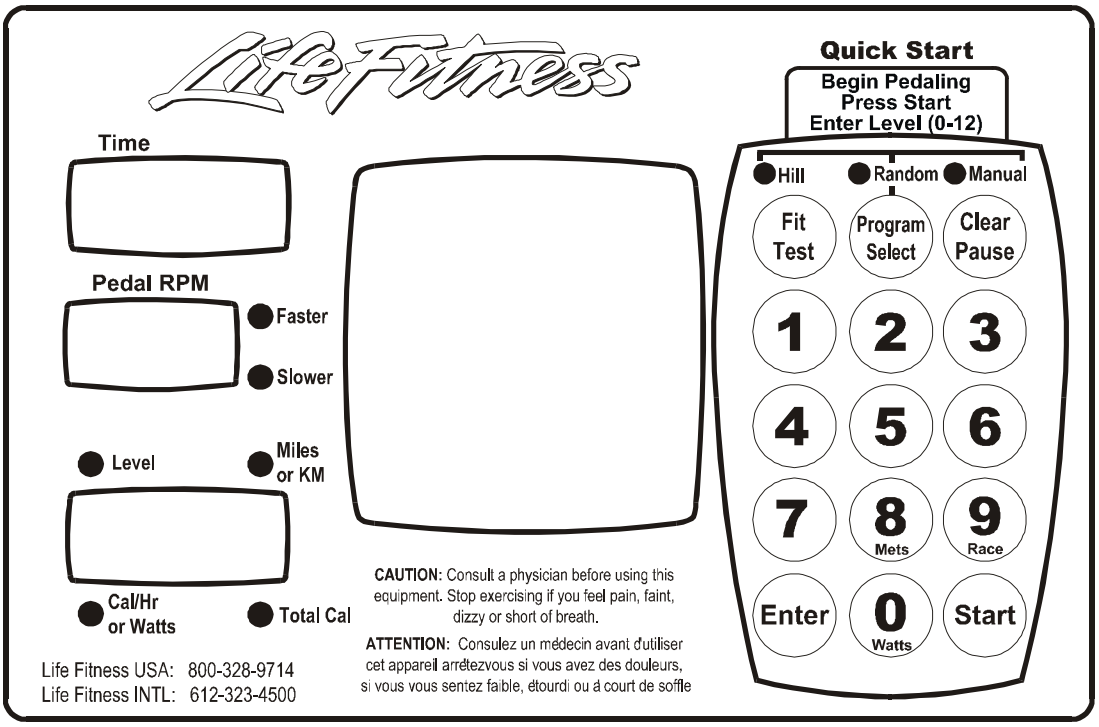
This test indicates that all keys on the Display are responding properly.

Press numeric 5 key and the Start key while pedaling 45 RPM or faster. On entry to this state, all of the LEDs will illuminate.

Pressing keys will result in a beep sound for all but the START/ENTER and CLEAR\PAUSE keys. The chart below indicates what number will be repeated across the message center when pressed.
Pressing keys in this state verifies and displays a value in each 7 segment display.

- ❑ Press **PROGRAM SELECT** key to display **'A'**
- ❑ Press **1** key to display **'1'**
- ❑ Press **2** key to display **'2'**
- ❑ Press **3** key to display **'3'**
- ❑ Press **4** key to display **'4'**
- ❑ Press **5** key to display **'5'**
- ❑ Press **6** key to display **'6'**
- ❑ Press **7** key to display **'7'**
- ❑ Press **8** key to display **'8'**
- ❑ Press **9** key to display **'9'**
- ❑ Press **0** key to display **'0'**
- ❑ **START** key - no response

Press **PAUSE/RESET** to exit and reset system to user Display or press **ENTER** to proceed to Diagnostics State 2.



This test indicates that all LEDs on the Display are working properly. The system will beep twice and begin walking through a sequence of LEDs as follows:

The upper 7-segment displays “FASTER”, “SLOWER”, “LEVEL”, and “MILES or KM” LEDs.

The bottom 7-segment displays “CAL/HR or WATTS”, TOTAL CAL”, “HILL”, “RANDOM”, and “MANUAL” LEDs.

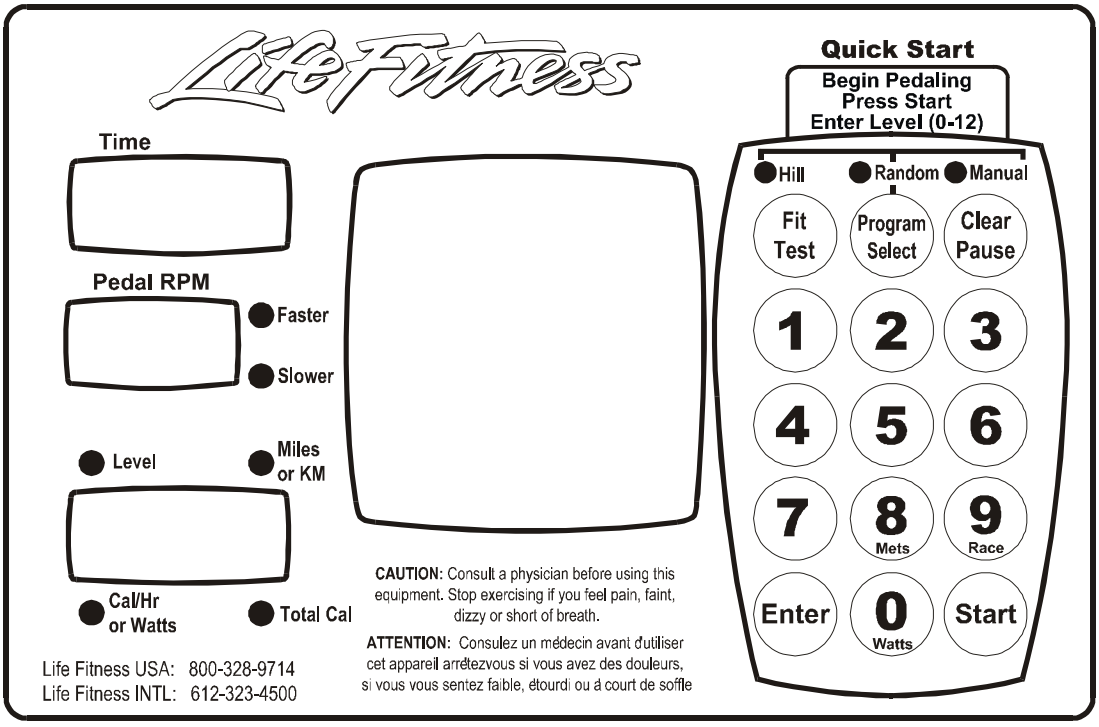
Next, an **‘8’** will be walked through each 7-segment display.

Finally, the column LEDs of the 7 x 7 matrix will begin walking from left to right.

When the right most column has been lit, a row of the 7 x 7 matrix will walk from bottom to top.

At the conclusion of this sequence, a beep is sounded and the sequence repeats again.

Diagnostics state 3 can be entered by pressing the **‘ENTER’** key or Diagnostics state 1 can be returned to by pressing the **‘PAUSE/RESET’** key. All other keys will have no effect.



This test indicates the state of the Software Version and Jumper Options. Upon entry the system will beep and begin displaying the current pedal rpm in the 3 digits of the pedal rpm window.

The selected jumper options are displayed in the ELAPSED TIME WINDOW.
A = NON-RECHARGABLE
E = English units of measurement
G = Metric units of measurement
R = Recumbent
U = Upright

ELAPSED TIME WINDOW

A	**G** or **E**	**U or R**	blank

The MULTI-FUNCTION DISPLAY WINDOW displays information about the software.

P = Production Code/Version 6/Revsion 1.

MULTI-FUNCTION DISPLAY

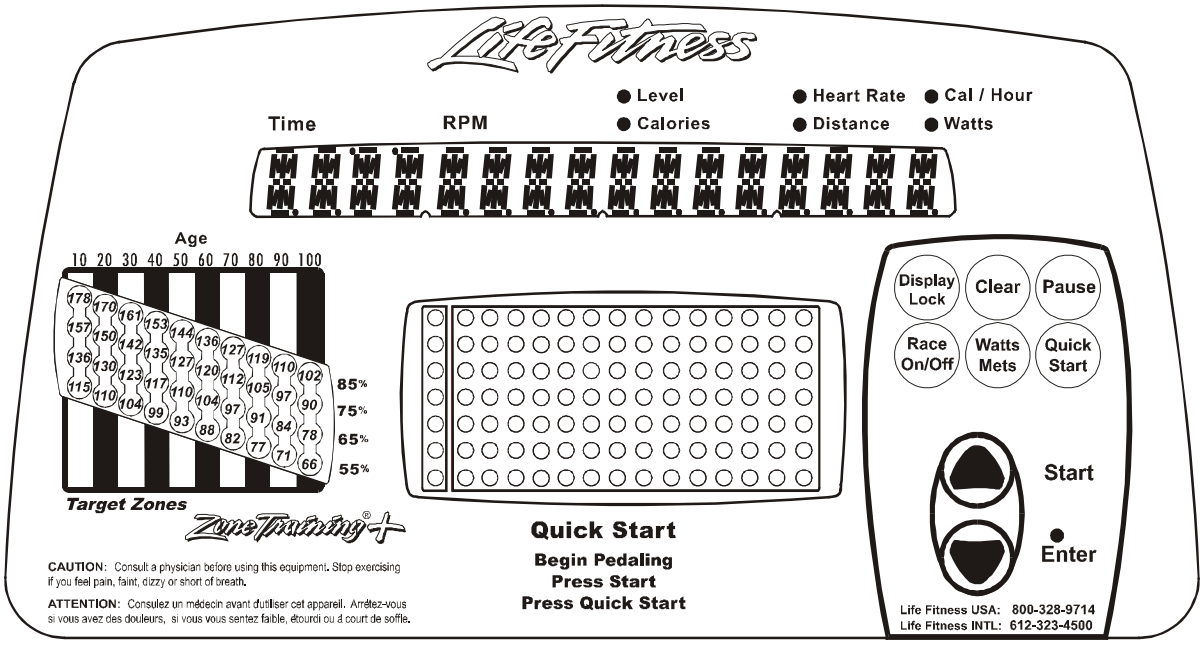
	P	**6.**	**1**

NOTES:

SECTION II - B

DIAGNOSTICS
Model C7i

DIAGNOSTICS STATE 1 - ALL LEDS and KEYPAD TEST

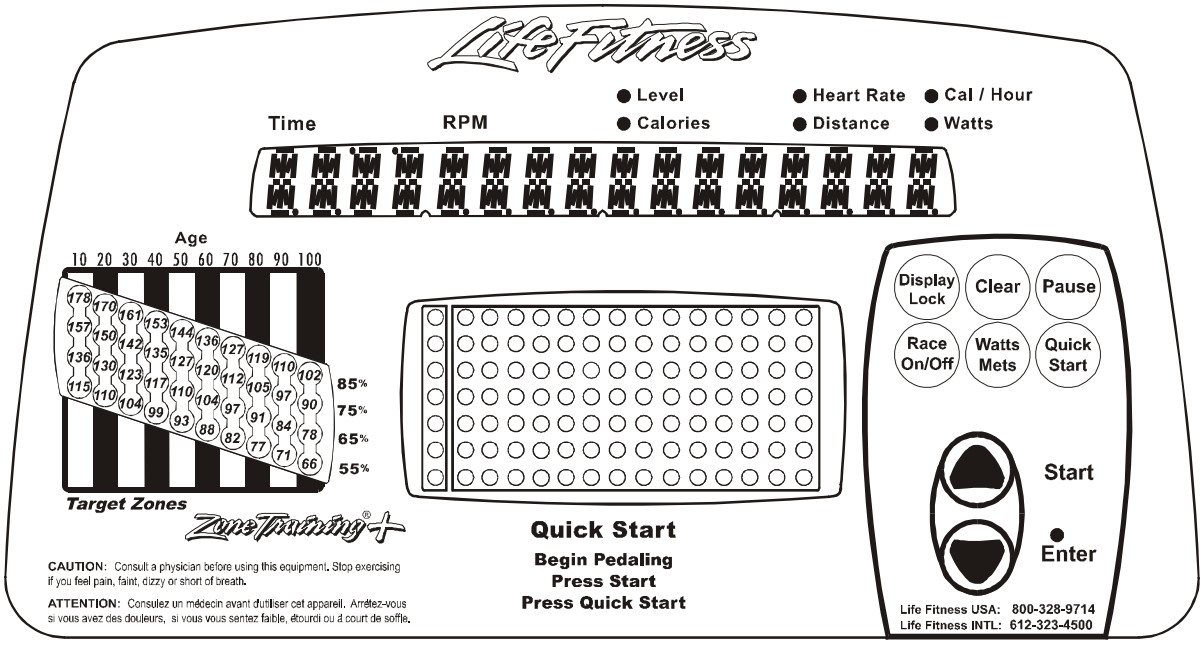


Press the DOWN ARROW key and the Start key while pedaling 45 RPM or faster. On entry to this state, all of the LEDs will illuminate.

Pressing keys will result in a beep sound for all but the START/ENTER and CLEAR\PAUSE keys. The chart below indicates what number will be repeated across the message center when pressed.

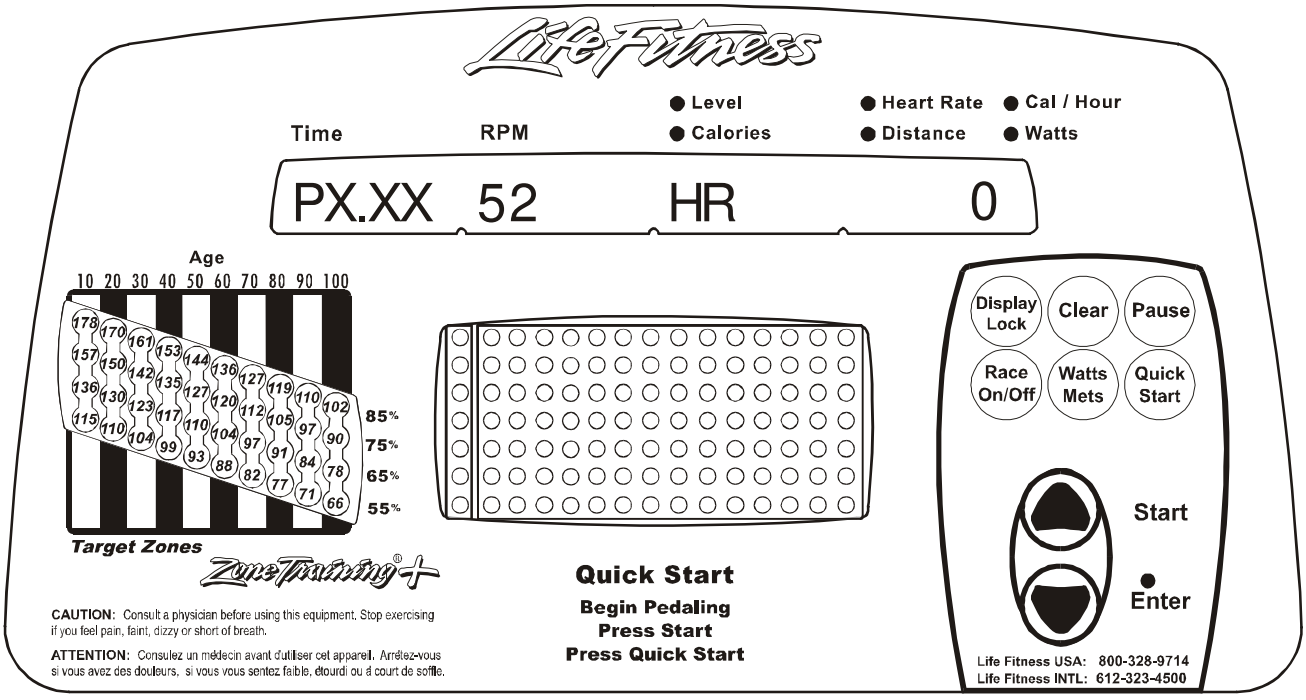
KEYS	***DISPLAYED CHARACTER***
0	'0'
1	'1'
2	'2'
3	'3'
4	'4'
5	'5'
6	'6'
7	'7'
8	'8'
9	'9'
DISPLAY LOCK	'L'
RACE MODE	'R'
WATTS/METS MODE	'W'
UP	'U'
DOWN	'D'

Press the 'CLEAR/PAUSE' key to abort DIAGNOSTICS and return to the 'PRESS START TO BEGIN' state, or press the 'START/ENTER' key to advance to the next DIAGNOSTIC STATE.



On entry to this state the indicator LEDs, the message center segments, and the profile LEDs will activate independently.

Press the CLEAR/PAUSE key to return to DIAGNOSTICS STATE 1 or press the START/ENTER key to advance to DIAGNOSTICS STATE 3.



The PROGRAM VERSION NUMBER (ex. P1.01) will be displayed in the ELAPSED TIME window.

The present RPM will be displayed in the RPM window.

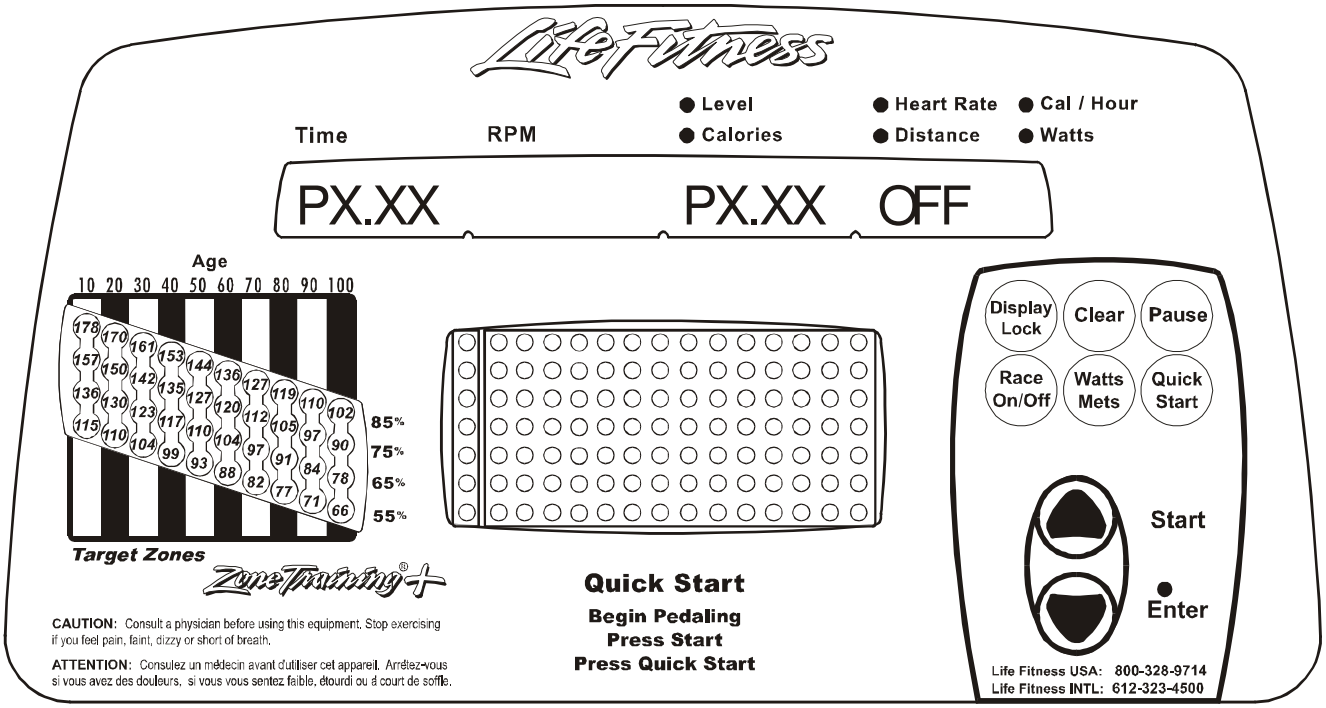
The HEART RATE, if present, will be displayed in the LEVEL/HEART RATE window.

The present LOAD DUTY CYCLE applied to the alternator will be displayed in the CALORIES/HOUR window provided the LIFEPULSE GAIN display has not been selected. LOAD DUTY CYCLE ranges from 0-415 for 9V battery products and 0-250 for all others in order of increasing load. This value can be adjusted using the UP and DOWN arrow keys to increase or decrease the LOAD duty cycle. Press the DISPLAY LOCK KEY to increment the LOAD DUTY CYCLE in units of 25. Press the PAUSE KEY to decrement the LOAD DUTY CYCLE in units of 25.

Pressing the QUICK START key once will disable the LOAD DUTY CYCLE, turn off the CALORIES/HR LED. Pressing the QUICK START key again will reenable the LOAD DUTY CYCLE display.

Press the WATTS METS key to toggle the Life Fitness part number of the console software.

Press the CLEAR/PAUSE key to return to DIAGNOSTICS STATE 2 or press the START/ENTER key to advance to DIAGNOSTICS STATE 4.



Section II

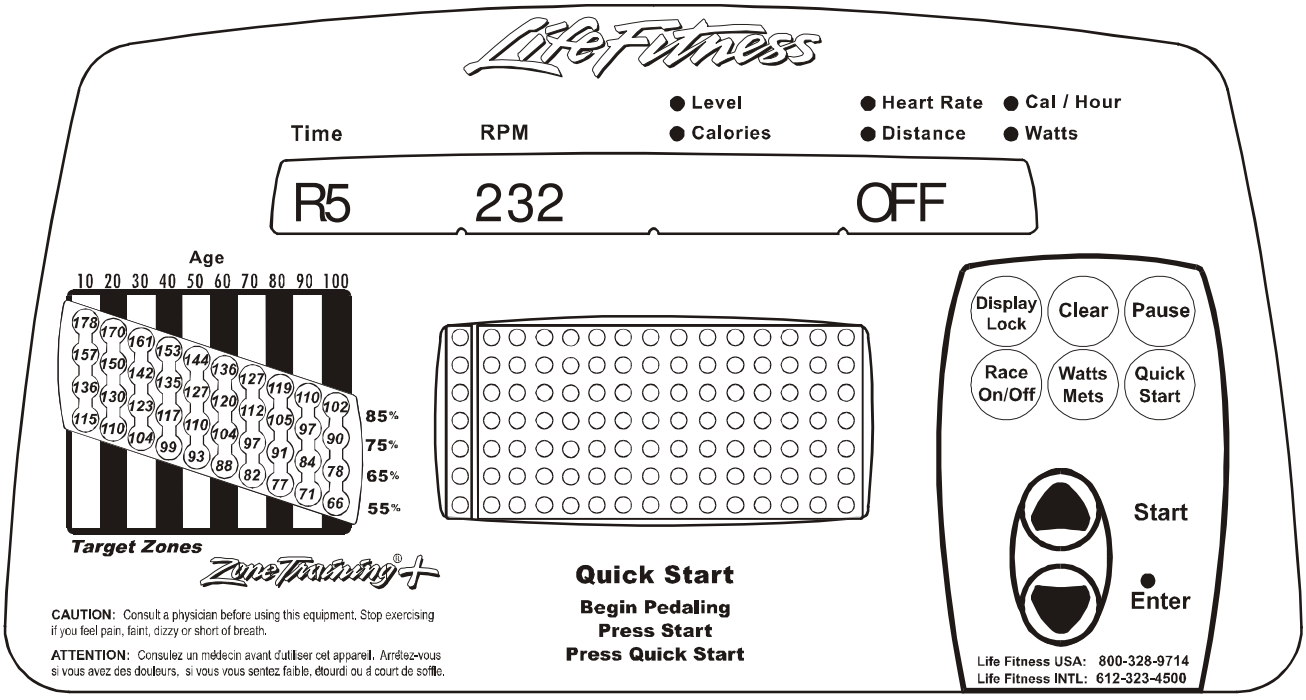
The PROGRAM VERSION NUMBER of the HEART RATE DSP board '05 software (ex. P1.60, if present) will be displayed in the ELAPSED TIME window.

The PROGRAM VERSION NUMBER of the HEART RATE DSP board DSP software (ex. P3.80, if present) will be displayed in the HEART RATE window.

The status of the life link board and lifecenter connection will be displayed in the calories/hour window. The following conditions will be reported.

NONE - No LIFELINK board detected.
HULL - Board detected but not communicating.
ON - ONLINE status with LIFE CENTER.
OFF - OFFLINE with LIFE CENTER.

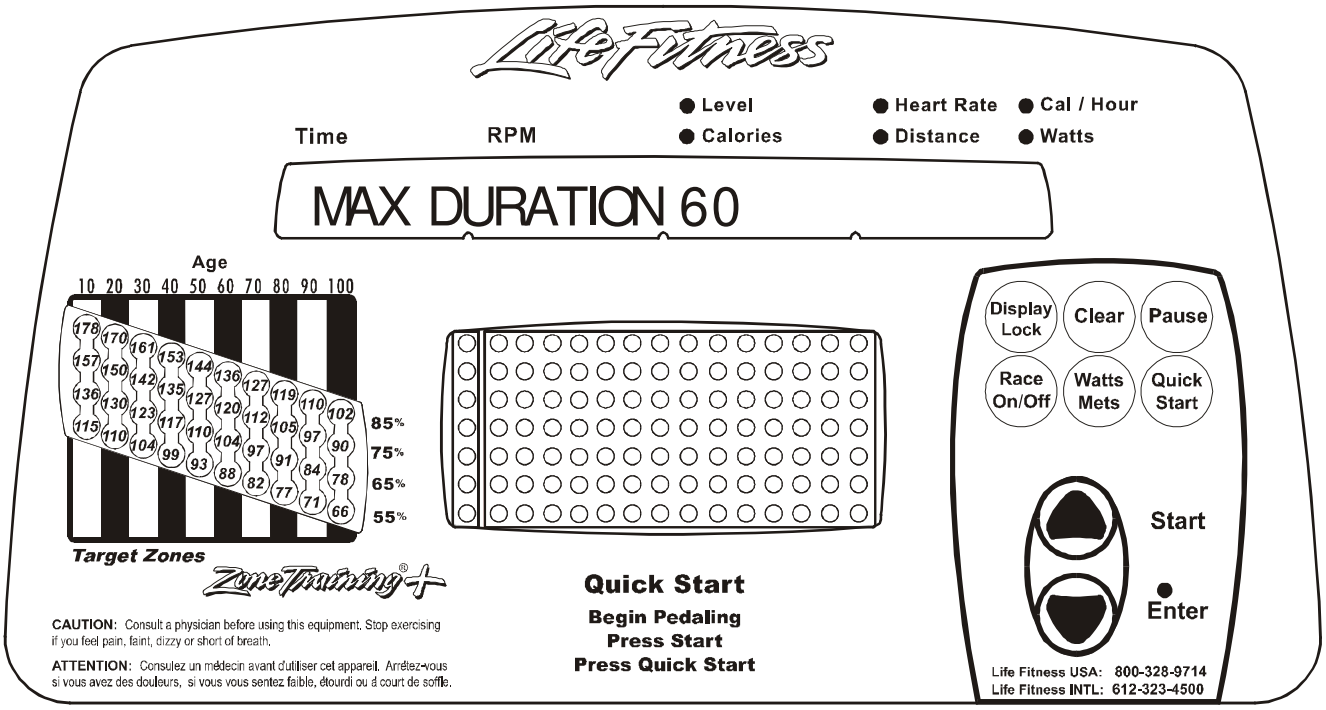
Press the CLEAR/PAUSE key to return to DIAGNOSTICS STATE 3 or press the START/ENTER key to advance to DIAGNOSTICS STATE 5.



This state tests the RS232 port. A shorted jumper must be connected for this test to function correctly.

If functioning correctly, “RS232 PASS” will be displayed.
If not-functioning correctly , “RS232 OFF” will be displayed.

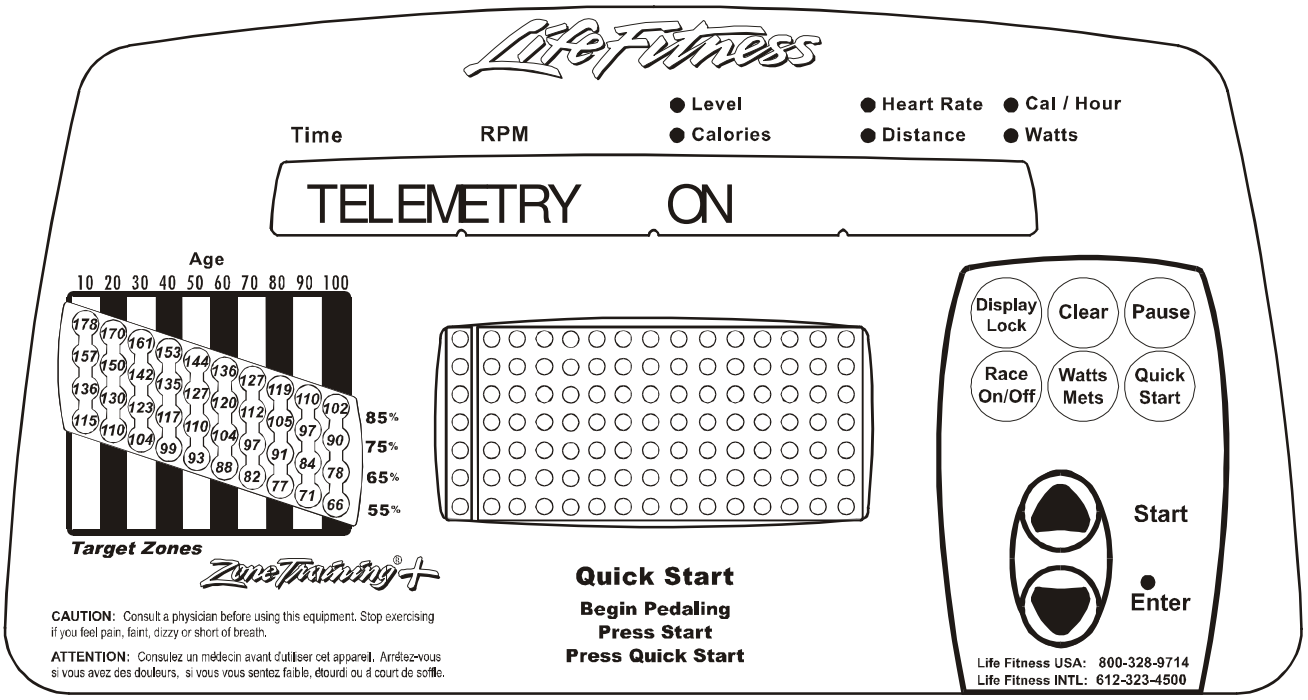
Press the CLEAR/PAUSE key to return to DIAGNOSTICS STATE 4 or press the START/ENTER key to advance to DIAGNOSTICS STATE 6.



The MAXIMUM PROGRAM DURATION is displayed and can be adjusted from a range of 10-99 minutes. Press the DOWN ARROW to decrease time in 1 minute decrements. Press the UP ARROW to increase in1 minute increments. Holding down an arrow key wll automatically increase or decrease minutes.

The ENTER key LED indicates when the value is at the default setting of 60 minutes. This default setting is stored in EEROM when the unit is not in use.

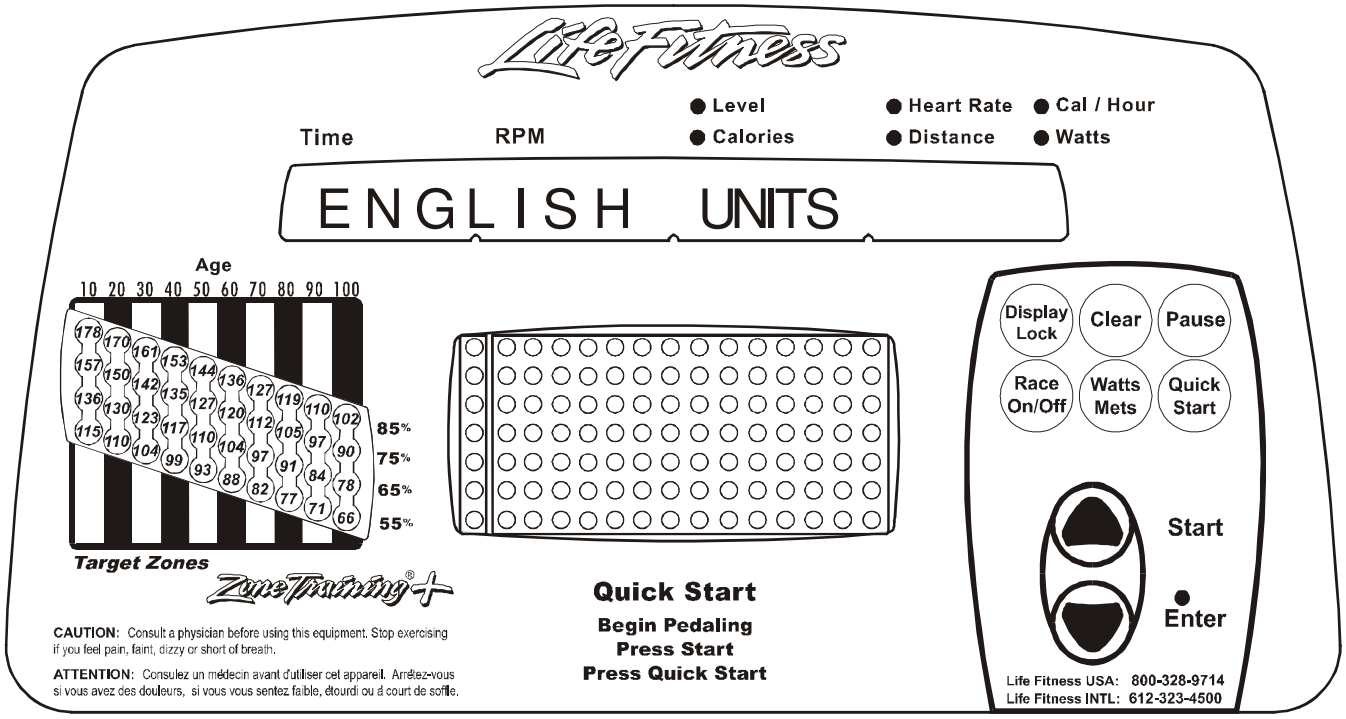
Press the CLEAR/PAUSE key to return to DIAGNOSTICS STATE 5 or press the START/ENTER key to advance to DIAGNOSTICS STATE 7.



Press the DOWN ARROW to turn OFF telemetry. Press the UP ARROW to turn ON telemetry. A heart shape in the program profile window will be displayed when telemetry is ON.

When the ENTER key LED is illuminated, it indicates the TELEMETRY is ON. This value is the default setting which is stored in the EEROM and is kept when the Lifecycle is not in use.

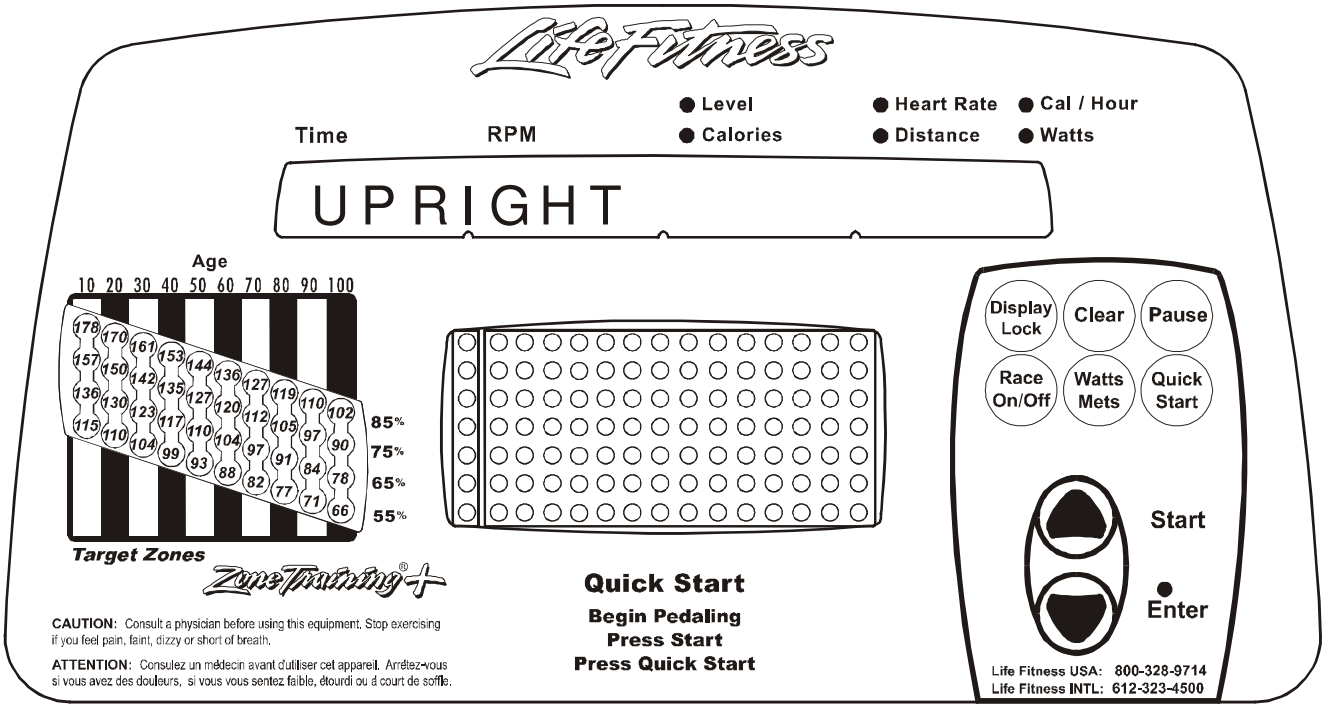
Press the CLEAR/PAUSE key to return to DIAGNOSTICS STATE 6, or press the START/ENTER key to advance to DIAGNOSTICS STATE 8.



Select ENGLISH or METRIC units. Press the DOWN ARROW to select METRIC units and the UP ARROW to select ENGLISH units.

The ENTER key led will illuminate to indicate the default setting (ENGLISH UNITS). This value is stored in EEROM and is kept when the unit is not in use.

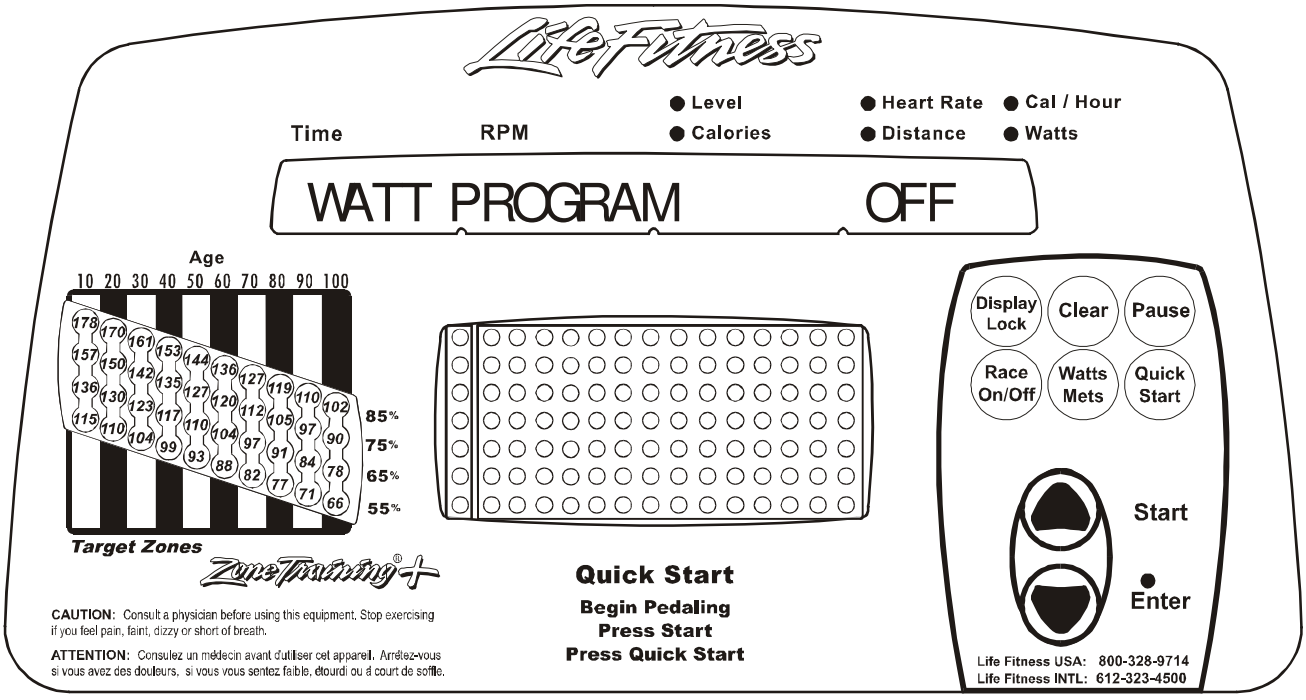
Press the CLEAR/PAUSE key to return to DIAGNOSTICS STATE 7 or press the START/ENTER key to advance to DIAGNOSTICS STATE 9.



Configure the unit for an upright or recumbent bike by pressing the DOWN ARROW for Recumbent and UP ARROW for Upright.

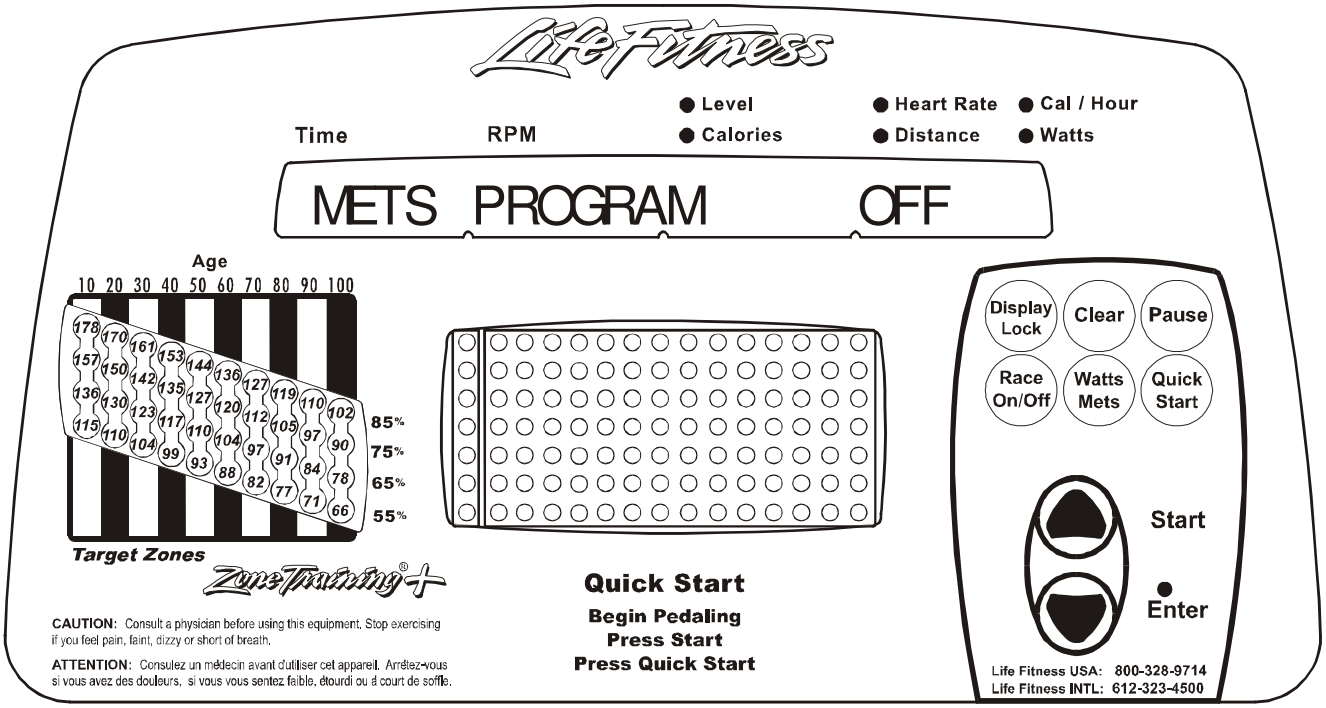
The ENTER key LED will illuminate to indicate the default. This will be stored in EEROM when the unit is not in use.

Pres the CLEAR/PAUSE key to return to DIAGNOSTICS STATE 8 or press the START/ENTER key to advance to DIAGNOSTICS STATE 10.



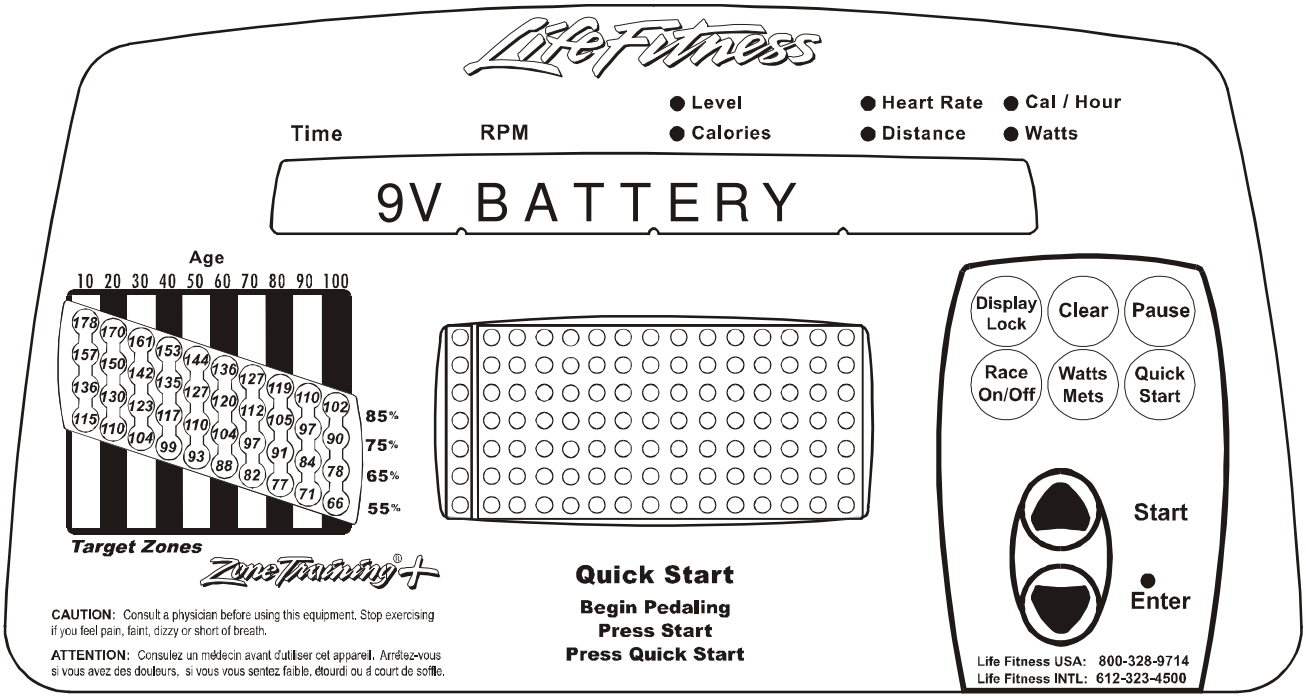
Select the UP ARROW to turn ON the WATTS mode and the DOWN ARROW to turn it OFF.

Press the CLEAR/PAUSE key to return to DIAGNOSTICS STATE 9 or press the START/ENTER key to advance to DIAGNOSTIC STATE 11.



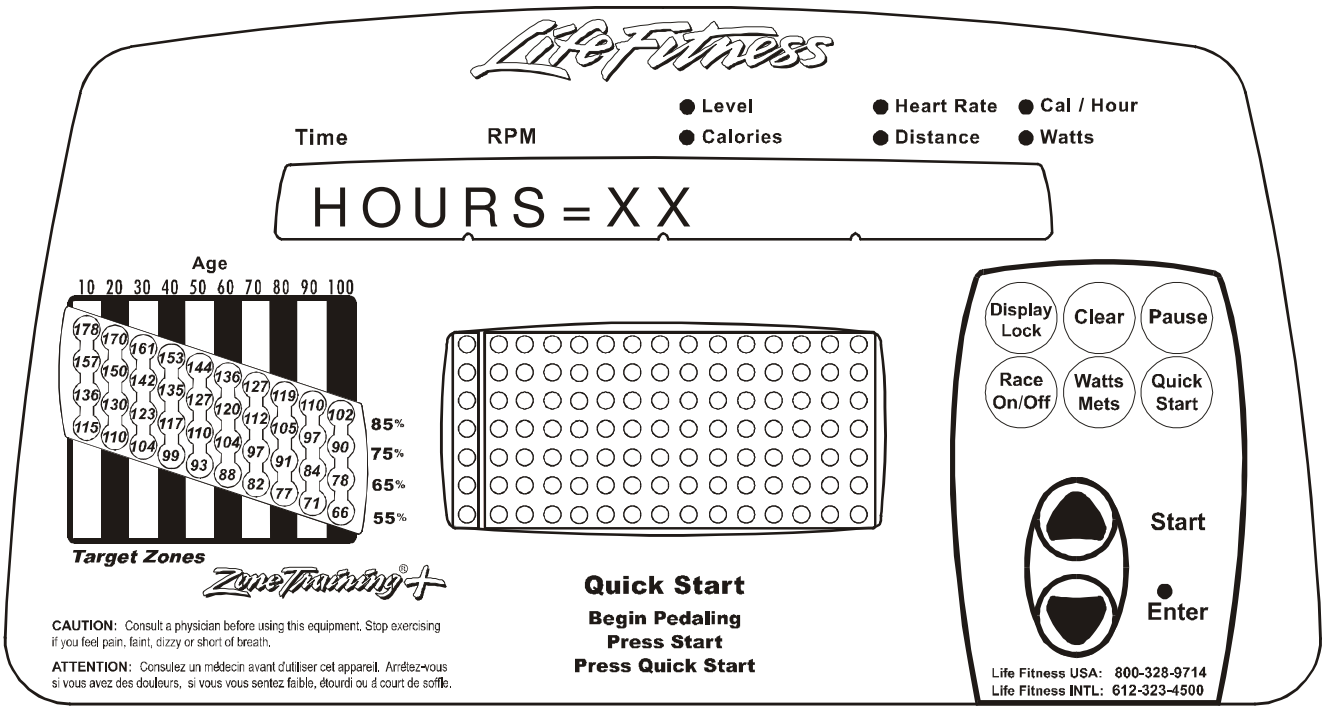
Select the UP ARROW to turn ON the METS mode and the DOWN ARROW to turn it OFF.

Press the CLEAR/PAUSE key to return to DIAGNOSTICS STATE 10 or press the START/ENTER key to advance to DIAGNOSTICS STATE 12.



Press both the UP and DOWN ARROW keys to toggle to 6-VOLT BATTERY, EXTERNAL SUPPLY, or 9-VOLT BATTERY (CVA). When the unit is not in use, this setting in stored in the EEROM.

Press the CLEAR/PAUSE key to return to DIAGNOSTICS STATE 10 or press the START/ENTER key to advance to DIAGNOSTICS STATE 12.

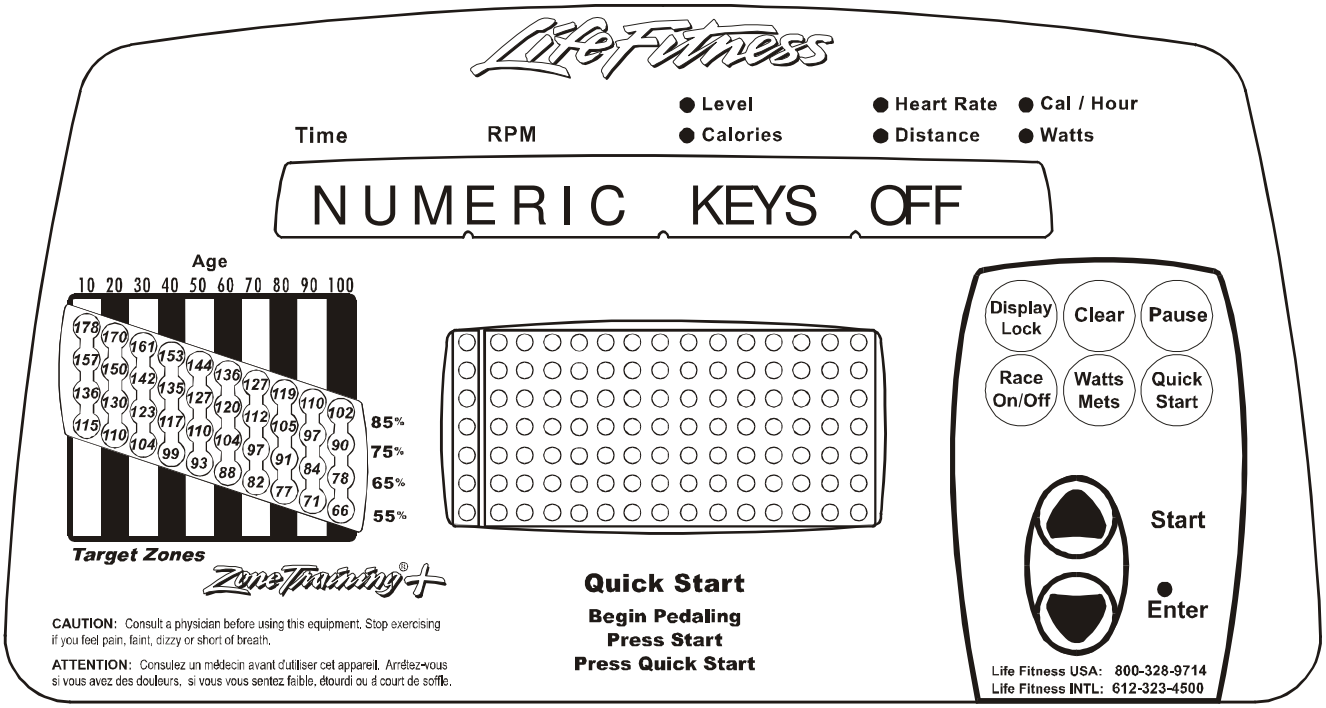


Upon entry to this state, TOTAL HOURS are displayed. STATISTICS can be displayed by pressing the UP and DOWN arrow keys. The UP ARROW allows scrolling through the available programs and shows the number of times each program has been selected. The UP and DOWN ARROWS are used to access list of available programs, and back to the total hours displayed.

The programs are:

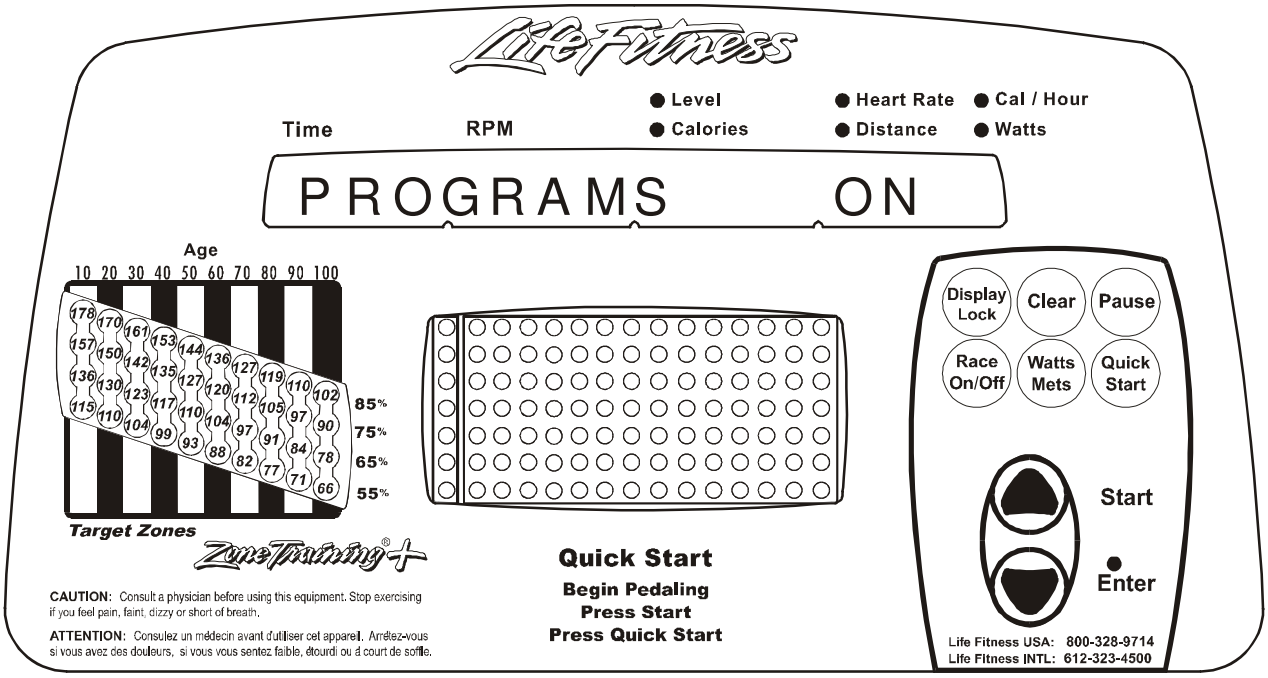
- HOURS
- HILL
- RANDOM
- MANUAL
- FAT
- CARDIO
- FIT
- WATTS
- METS
- QUICK
- HRT HILL
- HRT INT
- HRT EXT
- SPRT TRN

Press the CLEAR/PAUSE key to return to DIAGNOSTICS STATE 12 or press the START/ENTER key to advance to DIAGNOSTICS STATE 14.



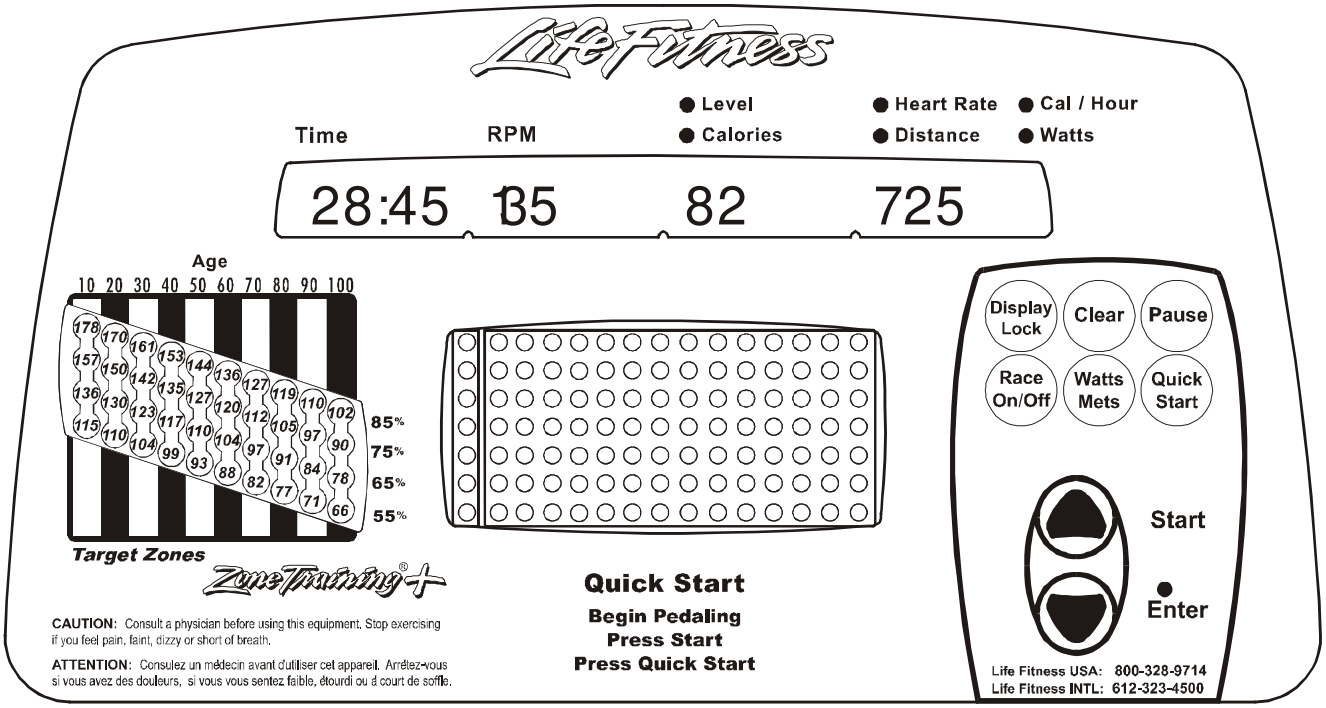
Since NO NUMERIC KEYS exist for either unit, this diagnostic mode should remain in the default state of NUMERIC KEYS OFF. If "NUMERIC KEYS ON" is displayed, press the DOWN ARROW until "NUMERIC OFF" is displayed.

Press the CLEAR/PAUSE key to return to DIAGNOSTICS STATE 13 or press the START/ENTER key to advance to DIAGNOSTICS STATE 15.



Enable or disable HEART RATE HILL, HEART RATE INTERVAL, HEART RATE EXTREME, or REAL WORLD BIKE. To select, press the DOWN ARROW to display PROGRAMS OFF and UP ARROW to display PROGRAMS ON. The ENTER key LED illuminates when the setting default “PROGRAMS OFF” is entered. This setting is stored in EEROM when the unit is not in use.

Press the CLEAR/PAUSE key to return to DIAGNOSTICS STATE 14 or press the START/ENTER key to advance to DIAGNOSTICS STATE 16.



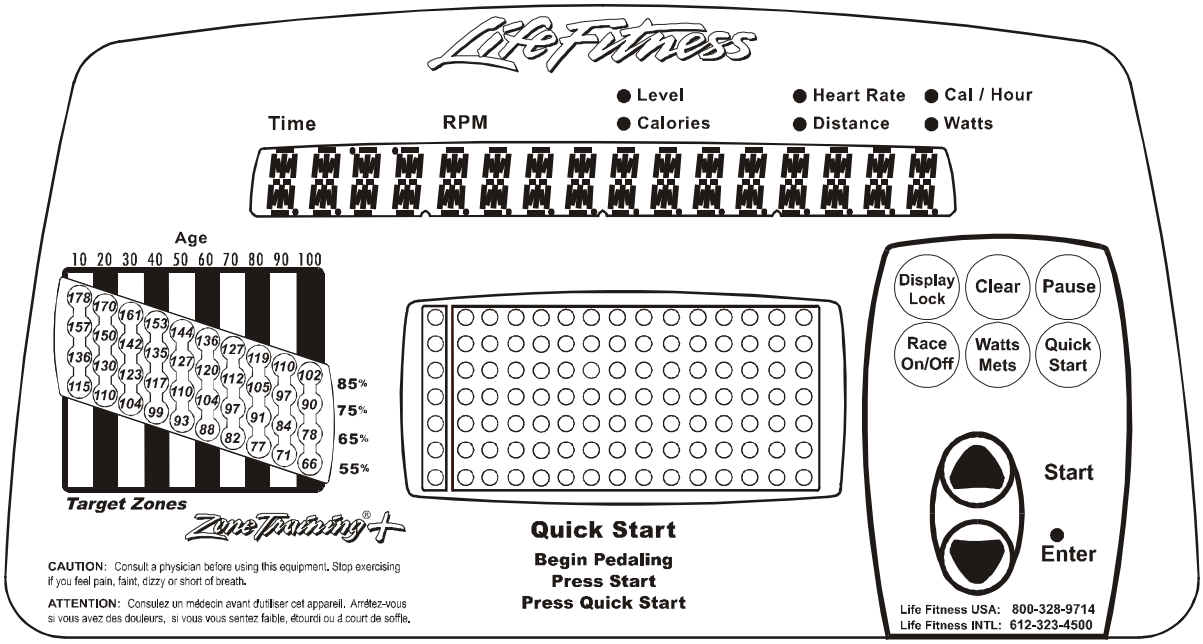
The data displayed are only a representation of typical settings for photographic purposes only.

To return to a previous DIAGNOSTIC STATE or return to the User Display, press the CLEAR/PAUSE key until desired field is reached.

NOTES:

SECTION II - C

DIAGNOSTICS
Model C9i

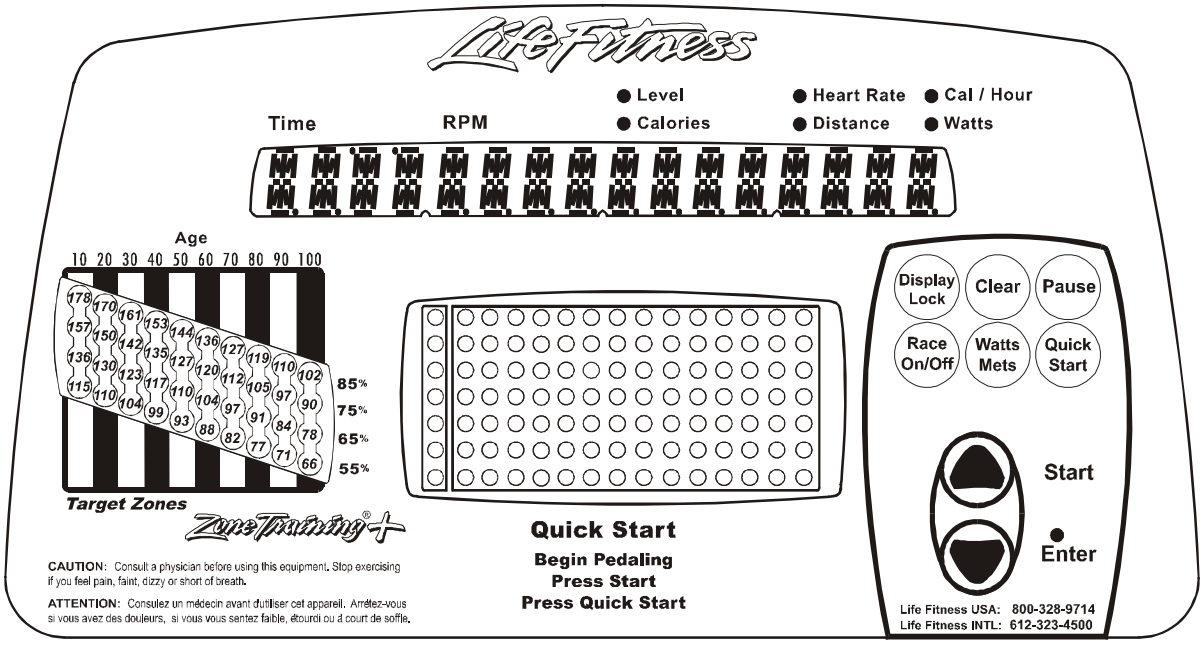


Press the DOWN ARROW key and the Start key while pedaling 45 RPM or faster. On entry to this state, all of the LEDs will illuminate.

Pressing keys will result in a beep sound for all but the START/ENTER and CLEAR\PAUSE keys. The chart below indicates what number will be repeated across the message center when pressed.

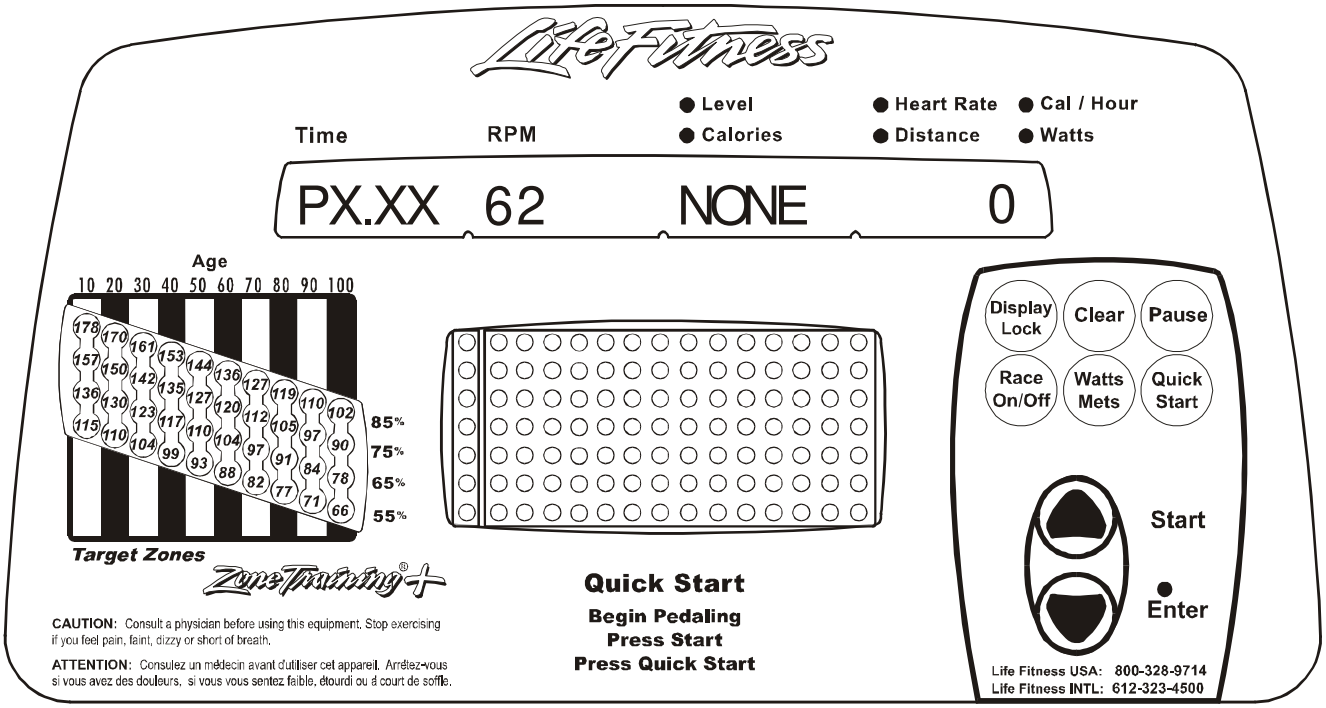
KEYS	***DISPLAYED CHARACTER***
0	'0'
1	'1'
2	'2'
3	'3'
4	'4'
5	'5'
6	'6'
7	'7'
8	'8'
9	'9'
DISPLAY LOCK	'L'
RACE MODE	'R'
WATTS/METS MODE	'W'
UP	'U'
DOWN	'D'

Press the 'CLEAR/PAUSE' key to abort DIAGNOSTICS and return to the 'PRESS START TO BEGIN' state, or press the 'START/ENTER' key to advance to the next DIAGNOSTIC STATE.



On entry to this state the indicator LEDs, the message center segments, and the profile LEDs will activate independently.

Press the CLEAR/PAUSE key to return to DIAGNOSTICS STATE 1 or press the START/ENTER key to advance to DIAGNOSTICS STATE 3.



The PROGRAM VERSION NUMBER (ex. P1.01) will be displayed in the ELAPSED TIME window.

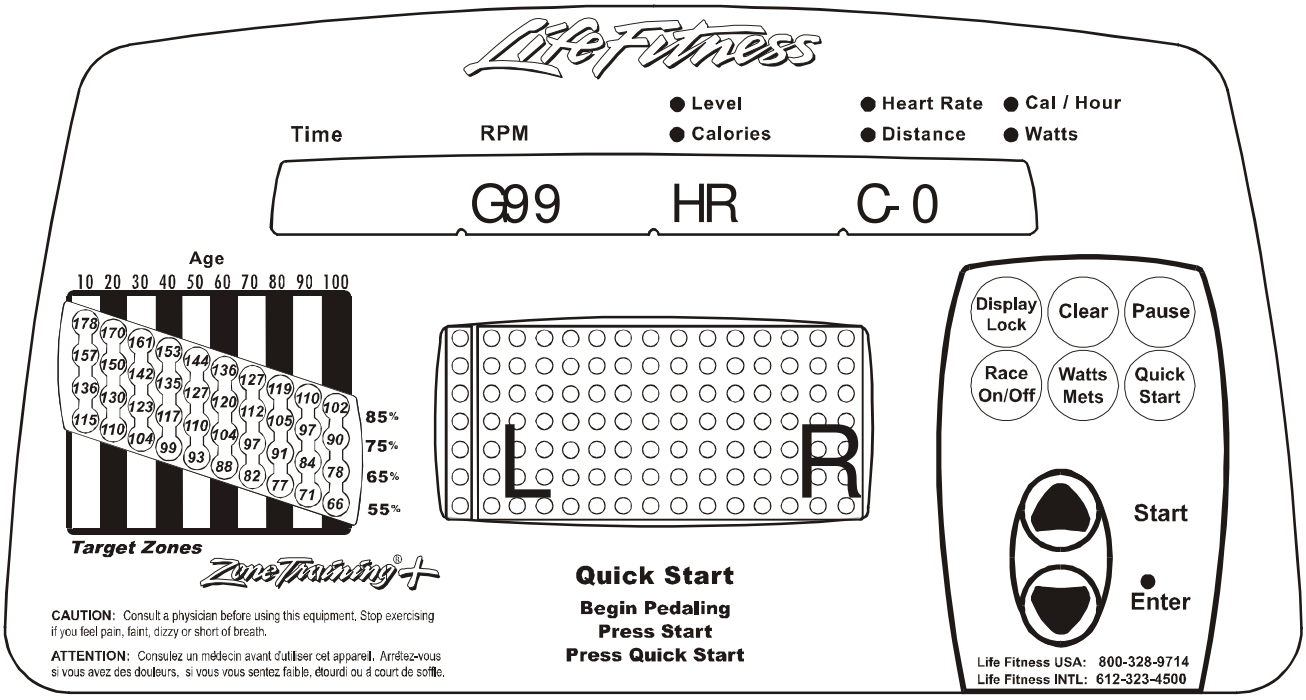
The present RPM will be displayed in the RPM window.

The NETWORK STATUS will be displayed in the LEVEL/CALORIES window.

The LOAD DUTY CYCLE will be displayed in the CALORIES/HOUR window. LOAD DUTY CYCLE ranges from 0-415 for 9V battery products, and 0-250 for all others in order of increasing load. This value can be adjusted using the 'UP' and 'DOWN' arrow keys to increase or decrease the LOAD duty cycle. Press the DISPLAY LOCK KEY to increment the LOAD DUTY CYCLE in units of 25. Press the PAUSE KEY to decrement the LOAD DUTY CYCLE in units of 25.

Press the WATTS/METS key to toggle the display of the Life Fitness part number of the console software. Pressing the RACE key will toggle the tone ON or OFF.

Press the CLEAR/PAUSE key to return to DIAGNOSTICS STATE 2 or press the START/ENTER key to advance to DIAGNOSTICS STATE 4.



Upon entry into this diagnostic state, the LifePulse software version number is displayed for 2 seconds, then the LP Comm Status is displayed for 2 seconds which will either display LP COMM ON or LP COMM OFF. Make sure LP COMM OFF appears, otherwise, CSAFE will not function correctly. The LP Comm Status can be toggled by pressing the DISPLAY LOCK key during the 2 second period when the LP Comm Status message is being displayed, which does not normally need to be adjusted. After these messages are have been displayed, the LifePulse test information comes up.

With both hands placed on the LifePulse sensors the ELAPSED TIME begins counting in the TIME window. This counter will stop counting as soon as a heart rate is displayed.

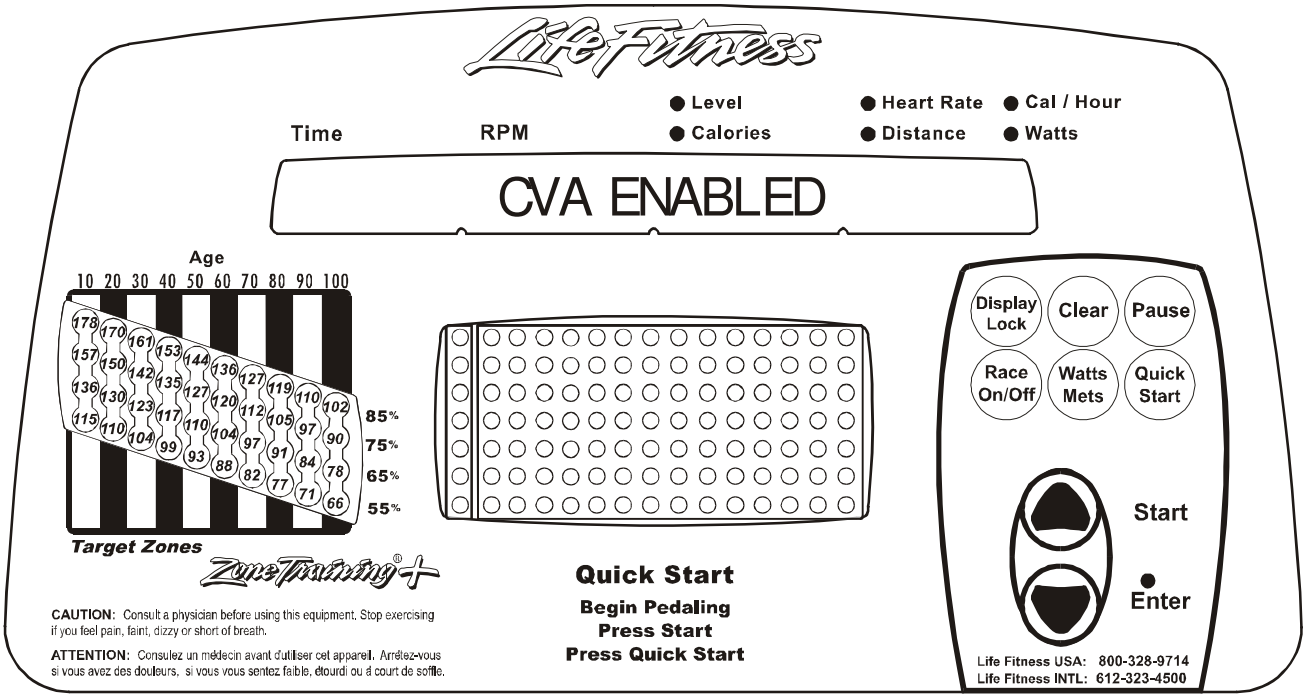
The GAIN is displayed in the RPM window.

The HEART RATE is displayed in the LEVEL/CALORIES window.

The CONFIDENCE LEVEL (0 – 9) is displayed in the CALORIES/HOUR window with 0 indicating the lowest confidence and 9 the highest.

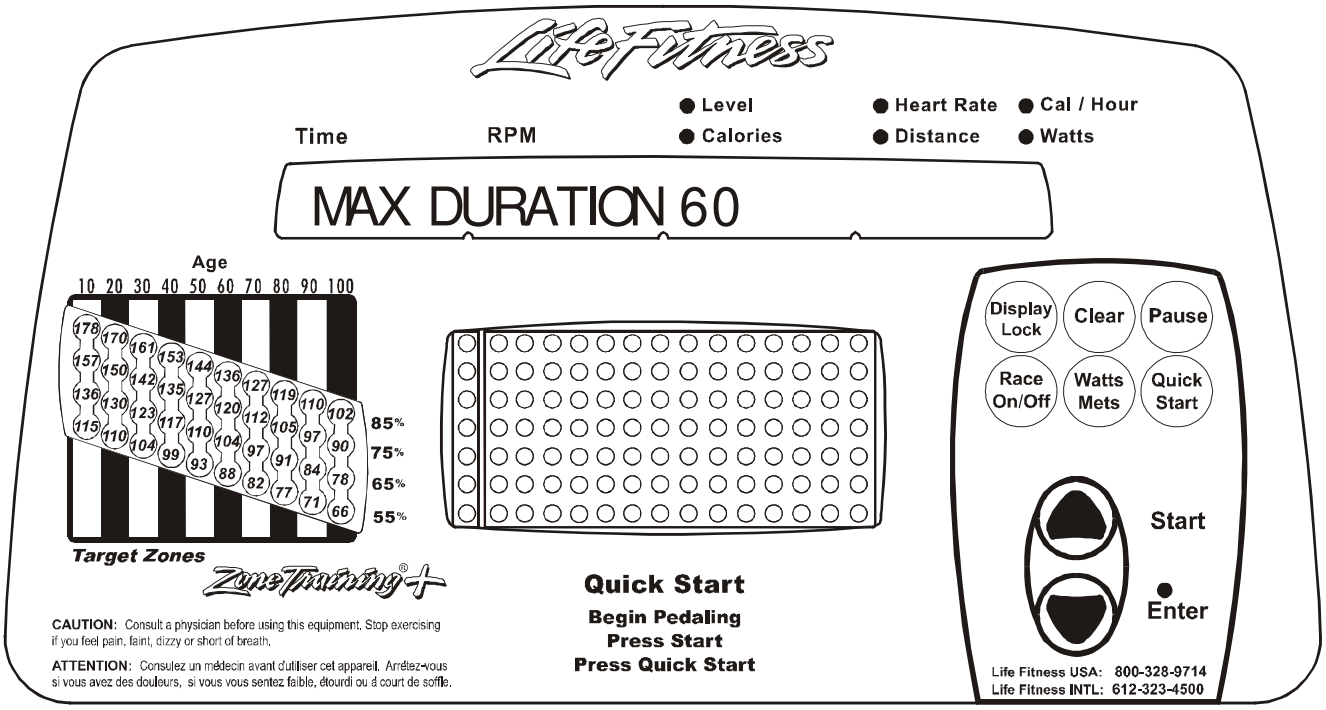
The profile window displays an 'L' when the left LifePulse sensor is being held, an 'R' when the right LifePulse sensor is being held, and an 'L' and 'R' when both sensors are being held.

Press the CLEAR/PAUSE key to return to DIAGNOSTICS STATE 3 or press the START/ENTER key to advance to DIAGNOSTICS STATE 5.



This state allows for enabling or disabling the CVA. Press the up ARROW key to ENABLE and the down ARROW key to DISABLE.

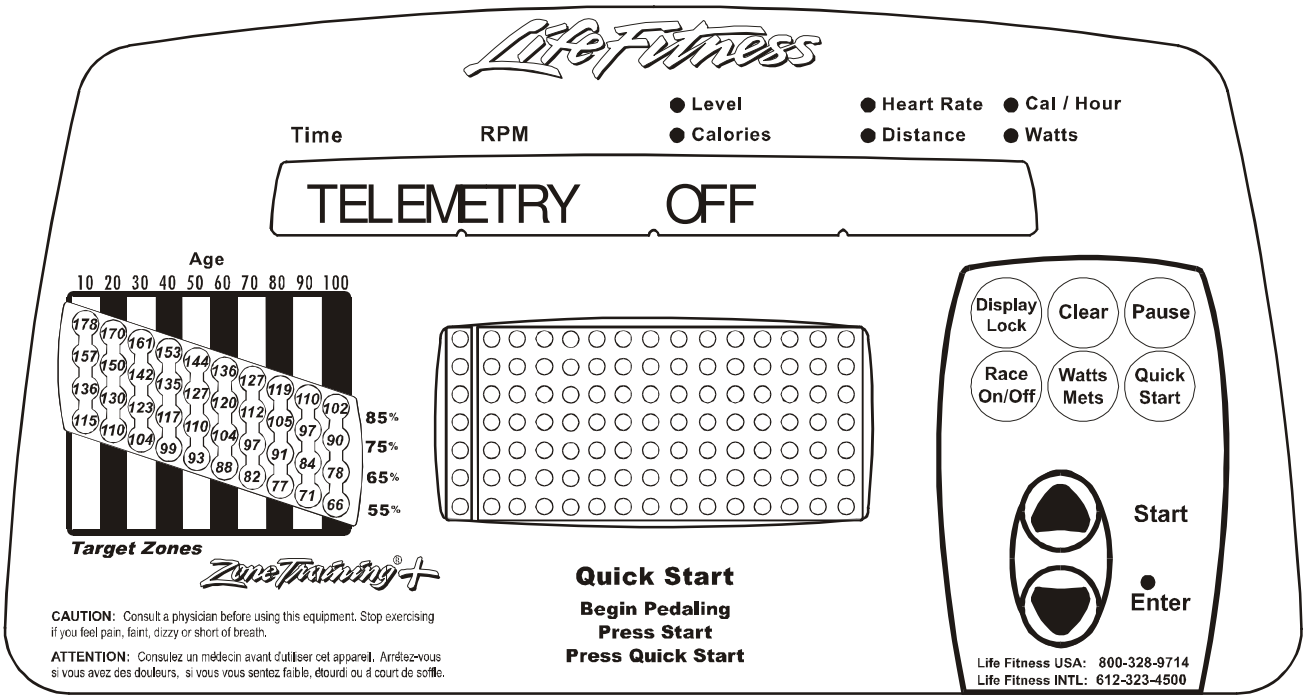
Press the CLEAR/PAUSE key to return to DIAGNOSTICS STATE 4 or press the START/ENTER key to advance to DIAGNOSTICS STATE 6.



The MAXIMUM PROGRAM DURATION is displayed and can be adjusted from a range of 10-99 minutes. Press the DOWN ARROW to decrease time in 1 minute decrements. Press the UP ARROW to increase in1 minute increments. Holding down an arrow key wll automatically increase or decrease minutes.

The ENTER key LED indicates when the value is at the default setting of 60 minutes. This default setting is stored in EEROM when the unit is not in use.

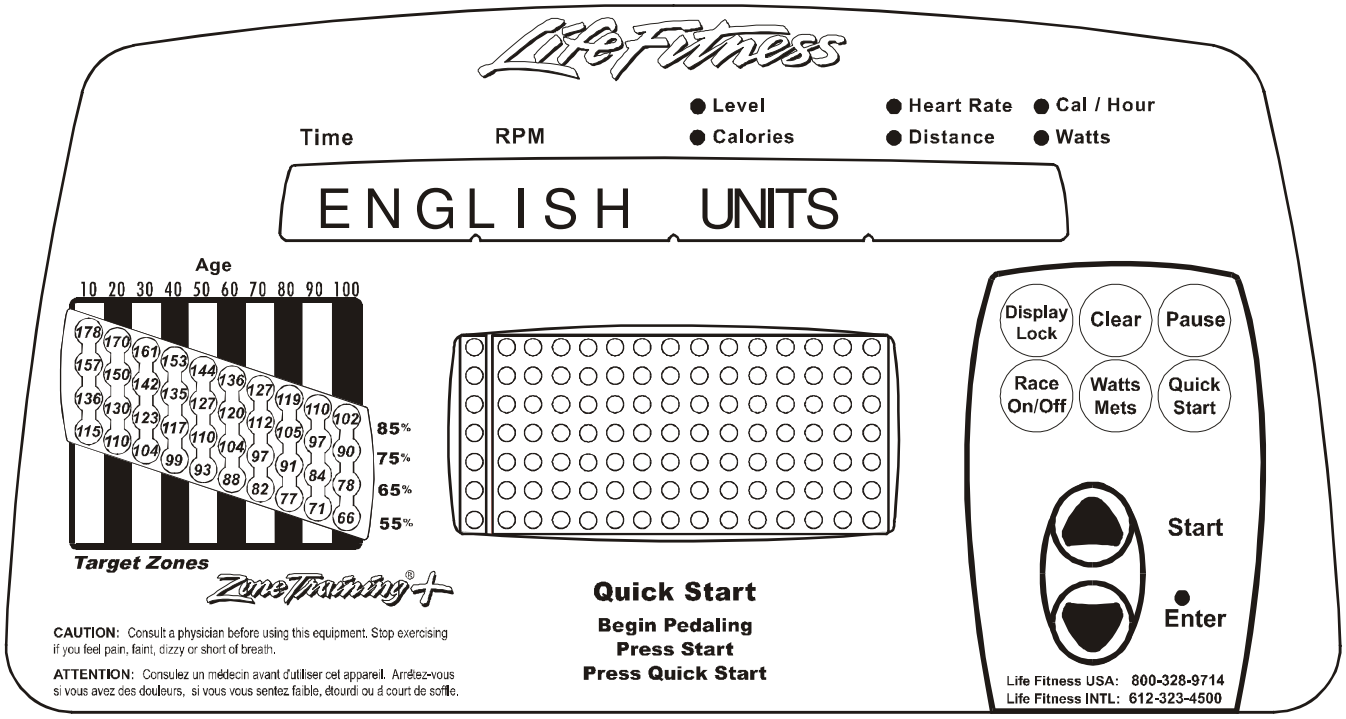
Press the CLEAR/PAUSE key to return to DIAGNOSTICS STATE 5 or press the START/ENTER key to advance to DIAGNOSTICS STATE 7.



Press the DOWN ARROW to turn OFF telemetry. Press the UP ARROW to turn ON telemetry. A heart shape in the program profile window will be displayed when telemetry is ON.

When the ENTER key LED is illuminated, it indicates the TELEMETRY is ON. This value is the default setting which is stored in the EEROM and is kept when the Lifecycle is not in use.

Press the CLEAR/PAUSE key to return to DIAGNOSTICS STATE 6, or press the START/ENTER key to advance to DIAGNOSTICS STATE 8.

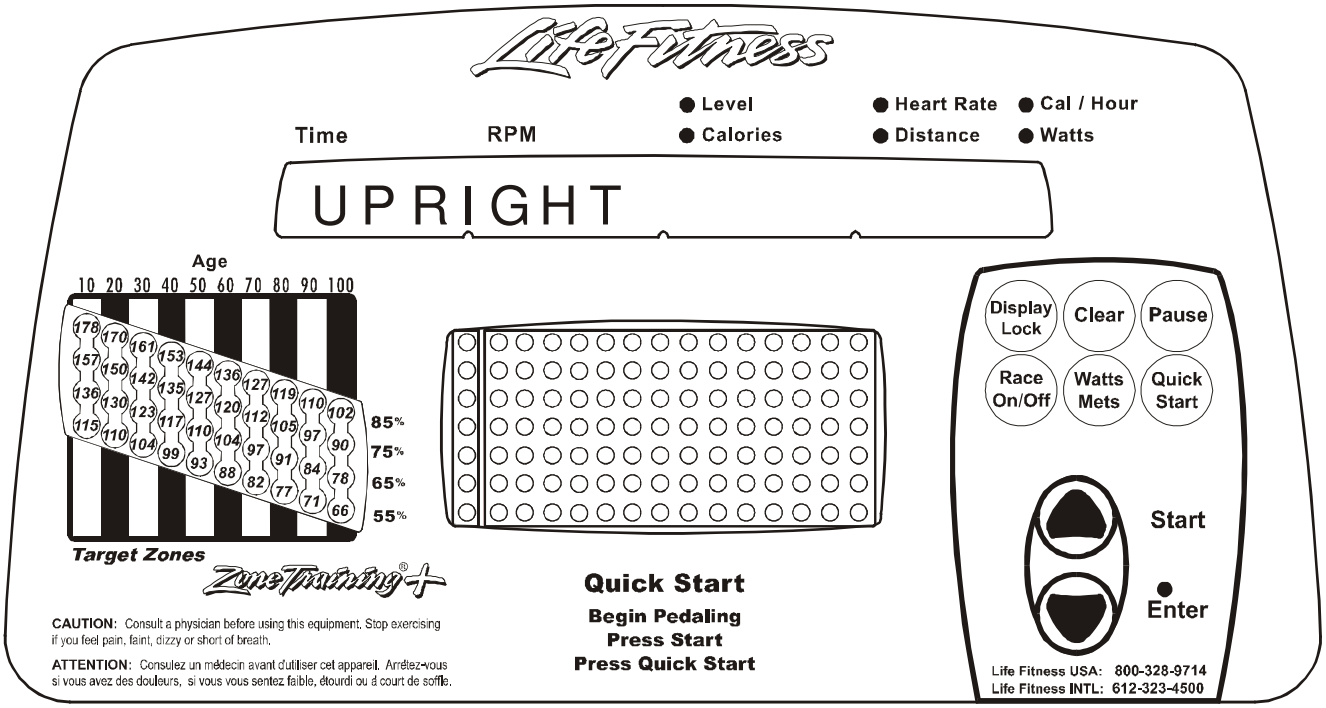


Section II

Select ENGLISH or METRIC units. Press the DOWN ARROW to select METRIC units and the UP ARROW to select ENGLISH units.

The ENTER key led will illuminate to indicate the default setting (ENGLISH UNITS). This value is stored in EEROM and is kept when the unit is not in use.

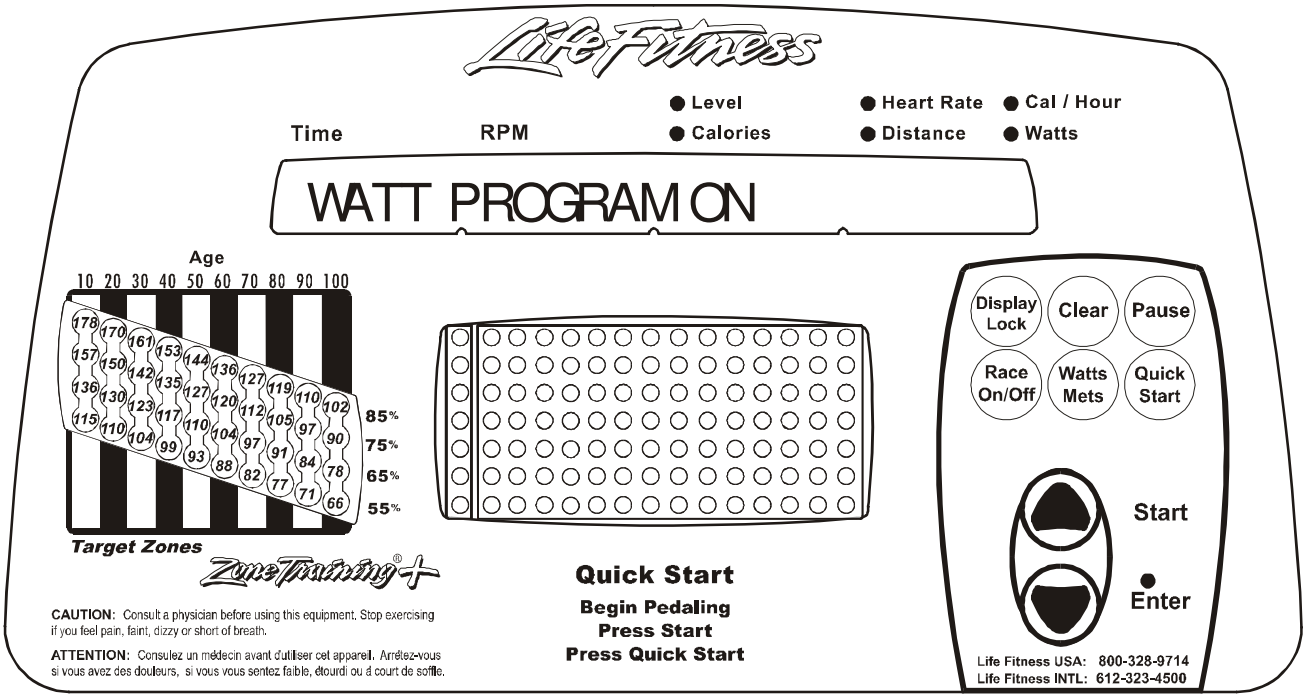
Press the CLEAR/PAUSE key to return to DIAGNOSTICS STATE 7 or press the START/ENTER key to advance to DIAGNOSTICS STATE 9.



Configure the unit for an upright or recumbent bike by pressing the DOWN ARROW for Recumbent and UP ARROW for Upright.

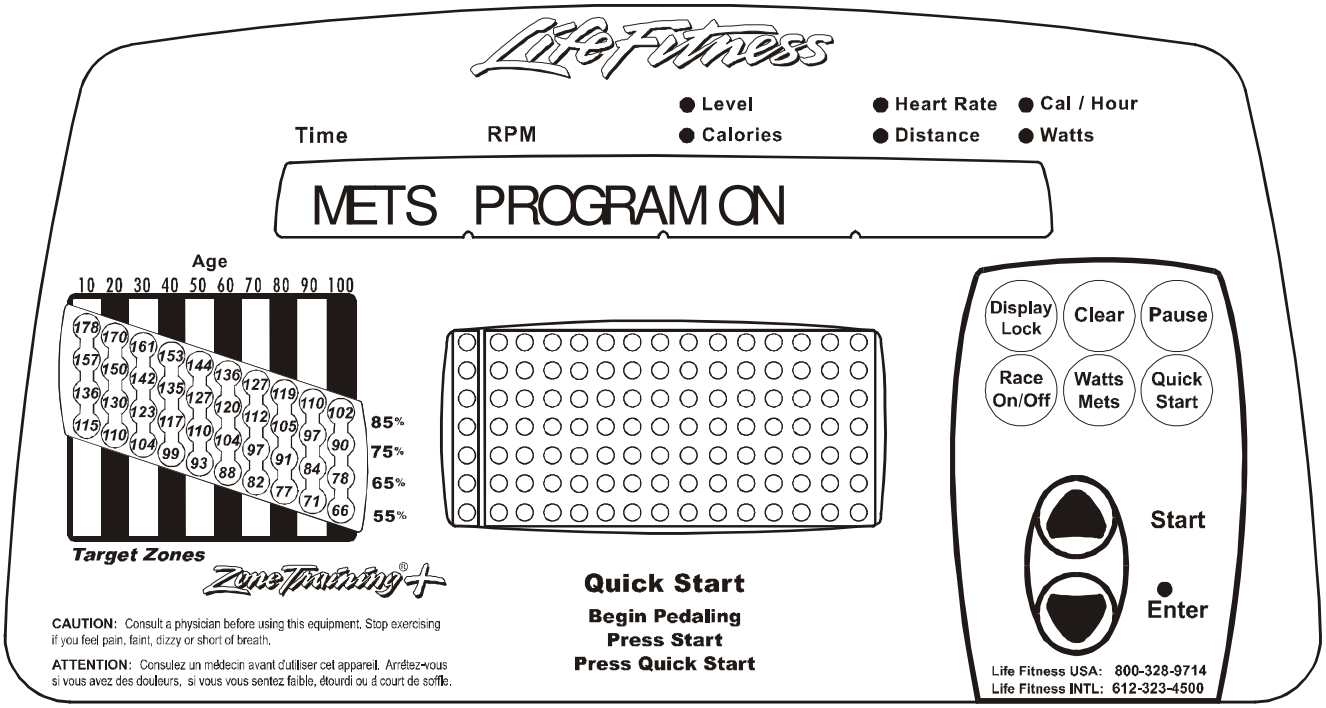
The ENTER key LED will illuminate to indicate the default. This will be stored in EEROM when the unit is not in use.

Press the CLEAR/PAUSE key to return to DIAGNOSTICS STATE 8 or press the START/ENTER key to advance to DIAGNOSTICS STATE 10.



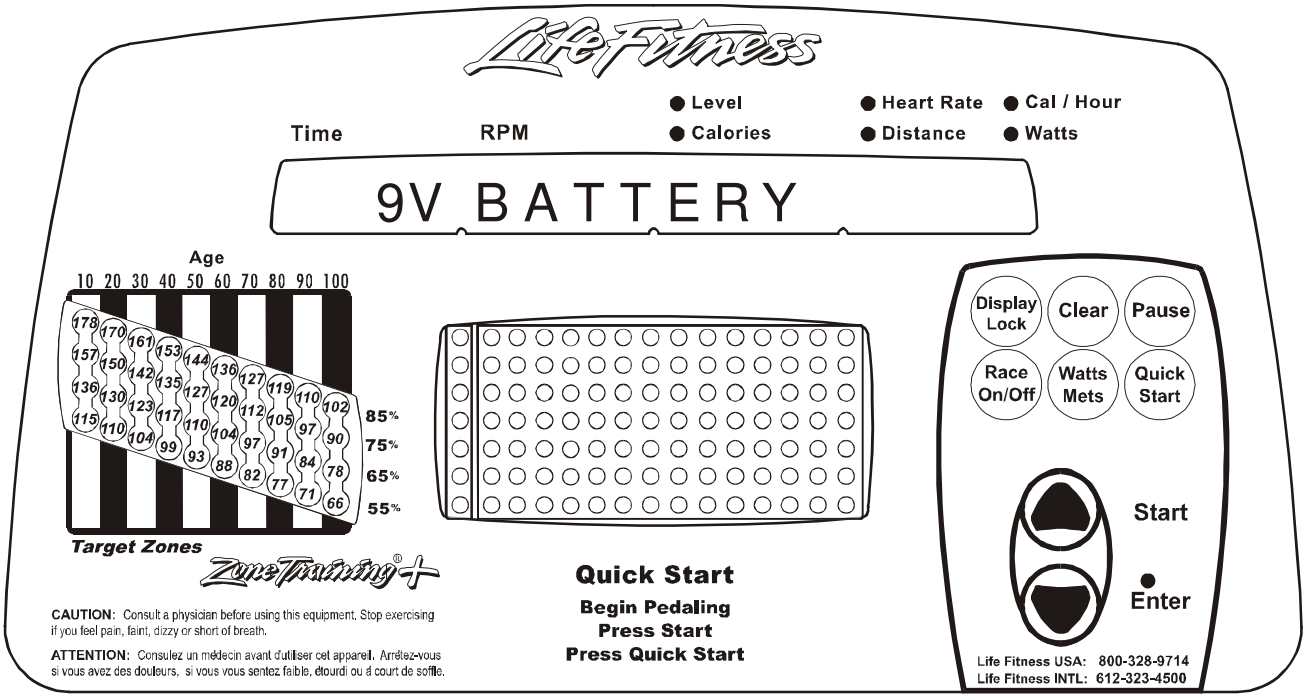
Select the UP ARROW to turn ON the WATTS mode and the DOWN ARROW to turn it OFF.

Press the CLEAR/PAUSE key to return to DIAGNOSTICS STATE 9 or press the START/ENTER key to advance to DIAGNOSTIC STATE 11.



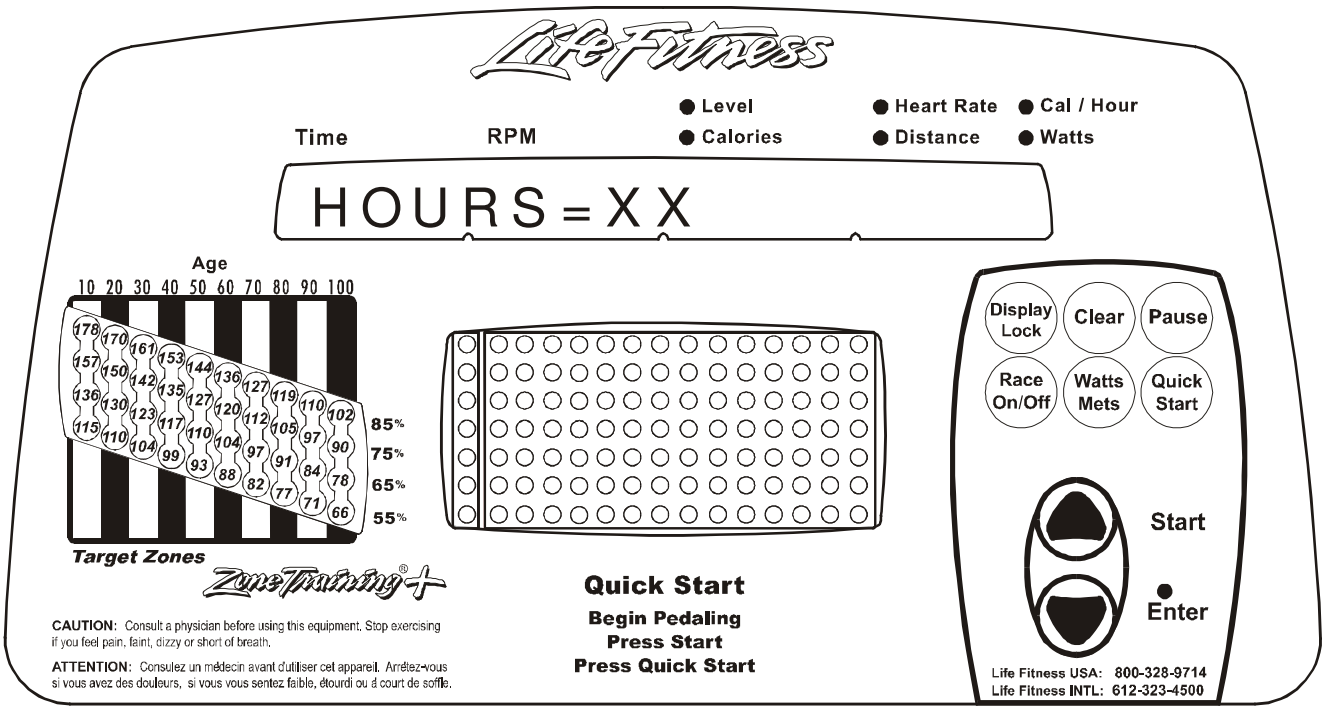
Select the UP ARROW to turn ON the METS mode and the DOWN ARROW to turn it OFF.

Press the CLEAR/PAUSE key to return to DIAGNOSTICS STATE 10 or press the START/ENTER key to advance to DIAGNOSTICS STATE 12.



Press both the UP and DOWN ARROW keys to toggle to 6-VOLT BATTERY, EXTERNAL SUPPLY, or 9-VOLT BATTERY (CVA). When the unit is not in use, this setting in stored in the EEROM.

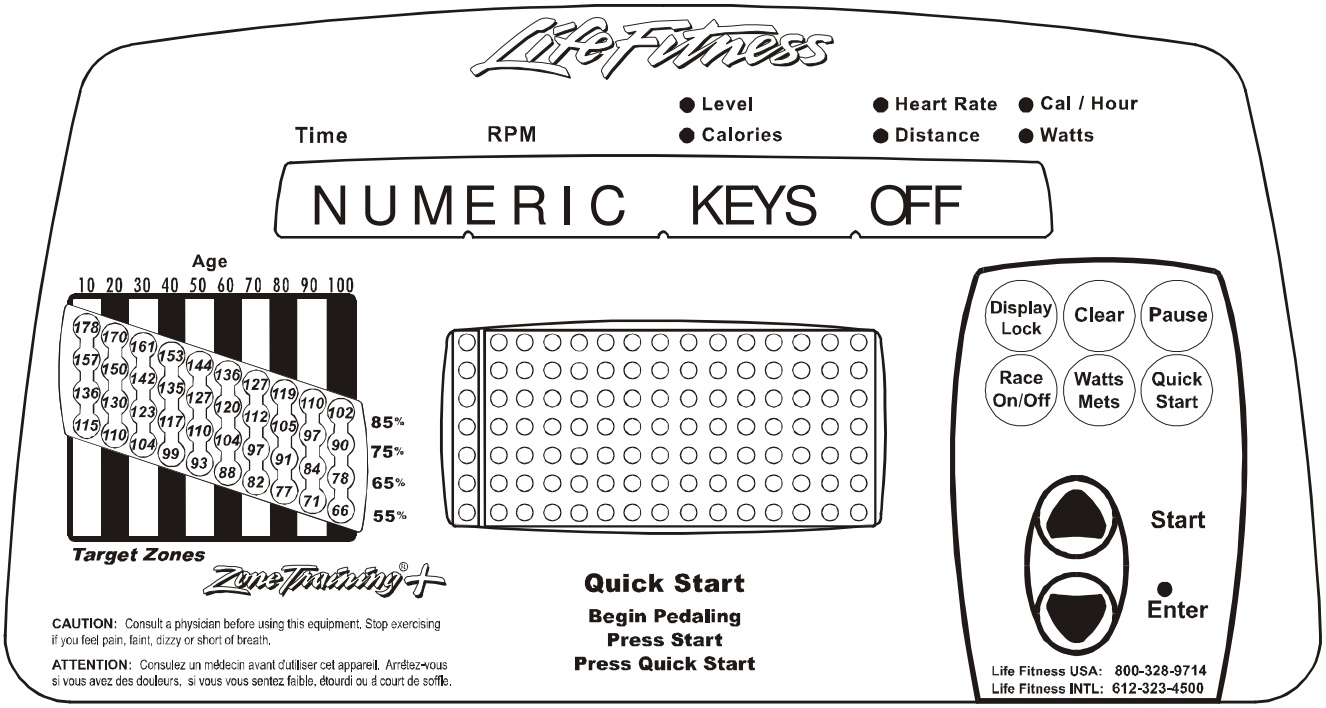
Press the CLEAR/PAUSE key to return to DIAGNOSTICS STATE 10 or press the START/ENTER key to advance to DIAGNOSTICS STATE 12.



Upon entry to this state, TOTAL HOURS are displayed. STATISTICS can be displayed by pressing the UP and DOWN arrow keys. The UP ARROW allows scrolling through the available programs and shows the number of times each program has been selected. The DOWN ARROW backs up through the list of available programs, and back to the total hours displayed.

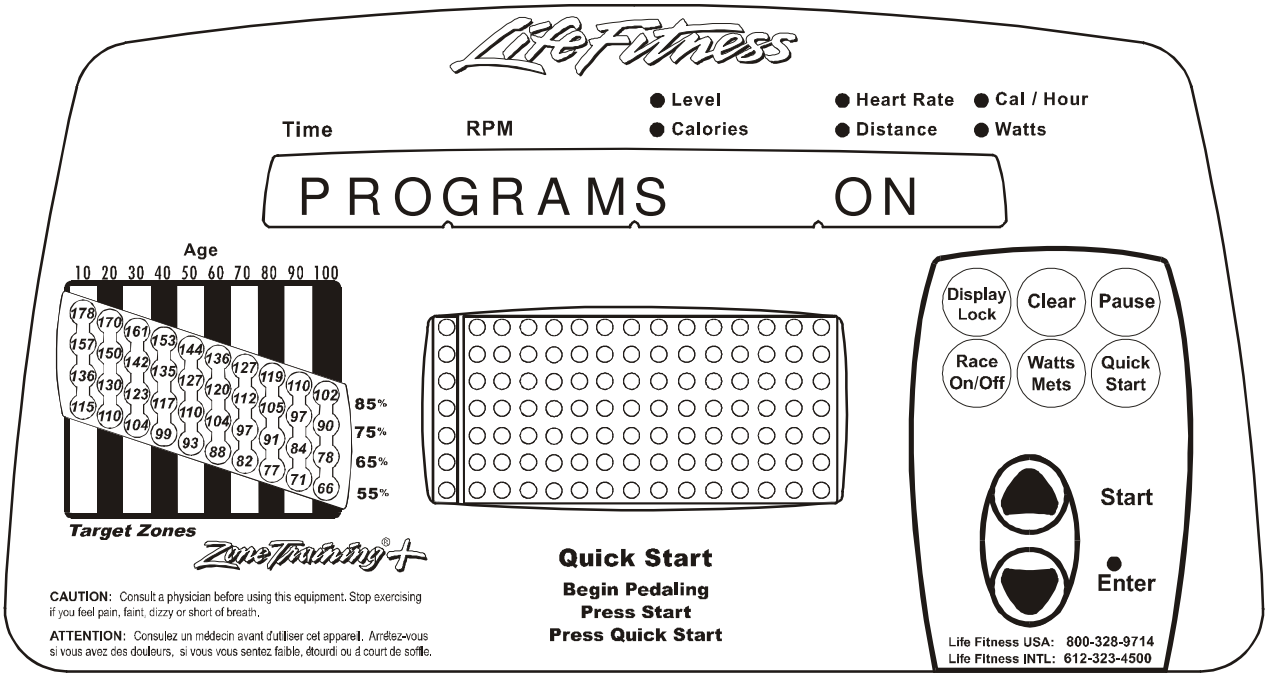
The programs are:
HOUR
HILL
RANDOM
MANUAL
FAT
CARDIO
FIT
WATTS
METS
QUICK
HRT HILL
HRT INT
HRT EXT
SPRT TRN

Press the CLEAR/PAUSE key to return to DIAGNOSTICS STATE 12 or press the START/ENTER key to advance to DIAGNOSTICS STATE 14.



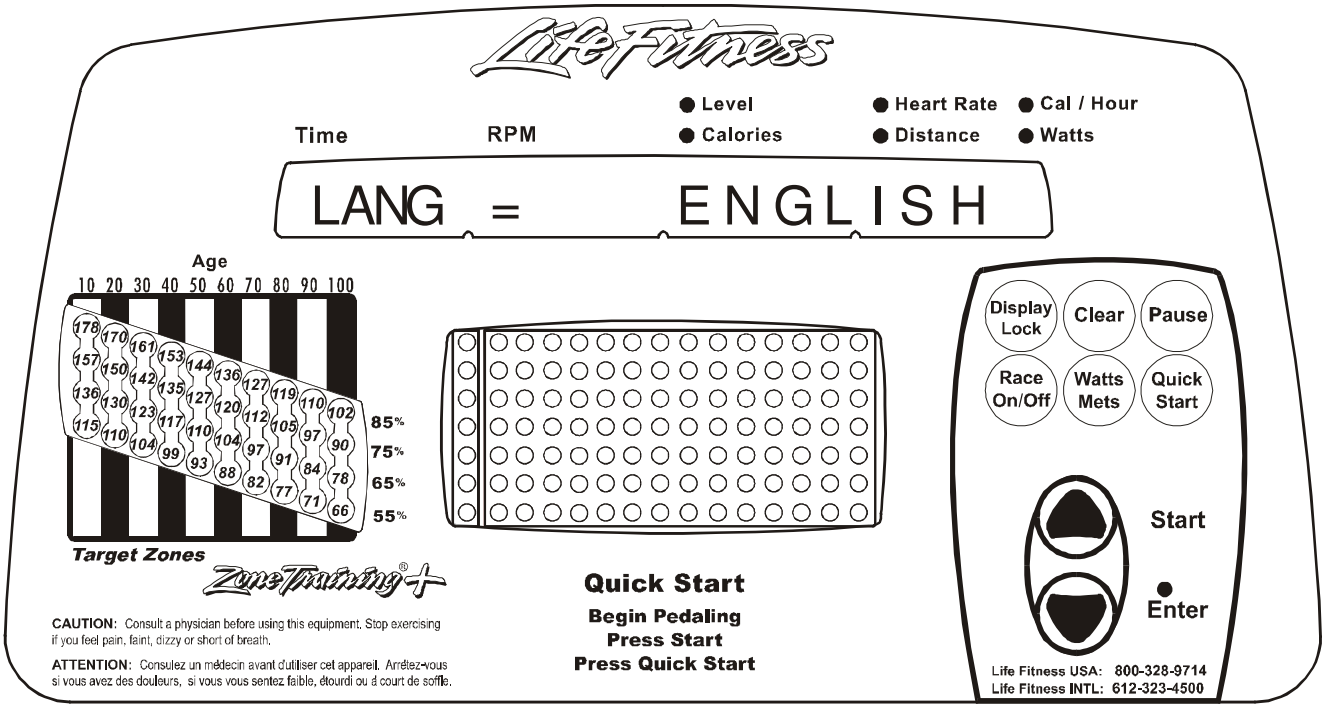
Since NO NUMERIC KEYS exist for either unit, this diagnostic mode should remain in the default state of NUMERIC KEYS OFF. If "NUMERIC KEYS ON" is displayed, press the DOWN ARROW until "NUMERIC OFF" is displayed.

Press the CLEAR/PAUSE key to return to DIAGNOSTICS STATE 13 or press the START/ENTER key to advance to DIAGNOSTICS STATE 15.



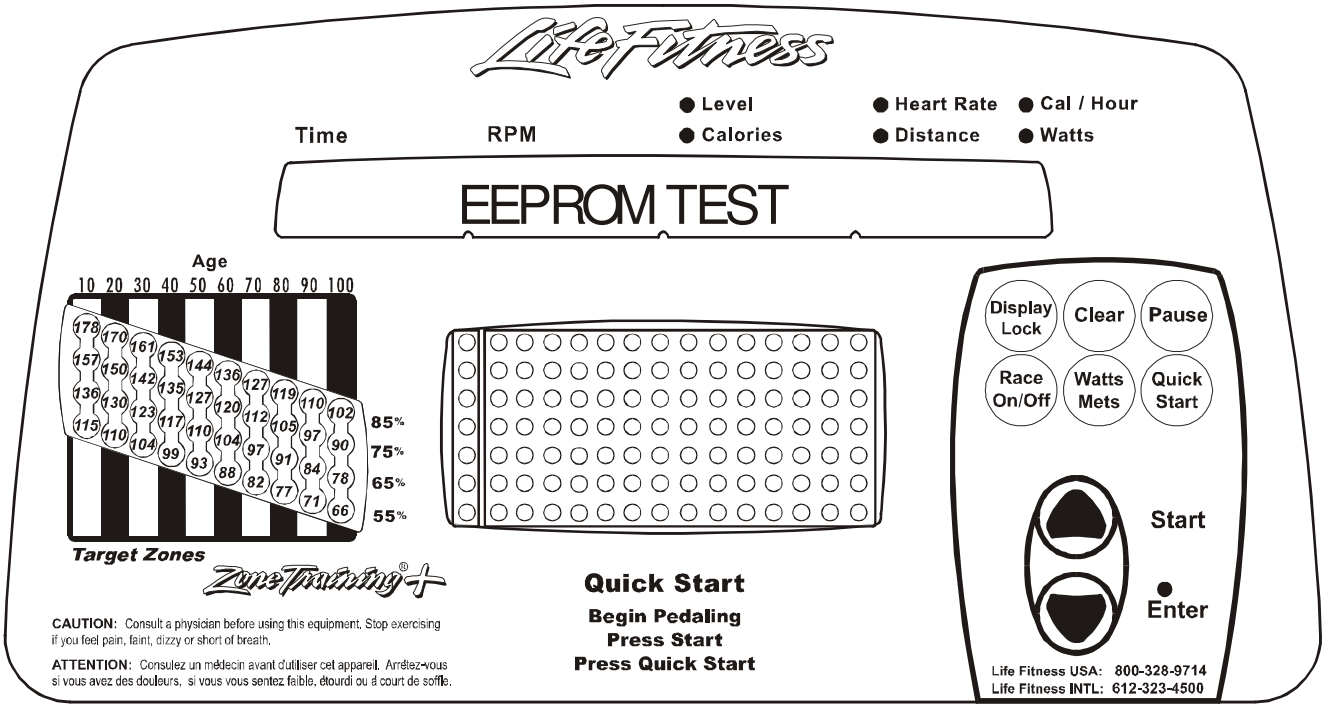
Enable or disable HEART RATE HILL, HEART RATE INTERVAL, HEART RATE EXTREME, or REAL WORLD BIKE. To select, press the DOWN ARROW to display PROGRAMS OFF and UP ARROW to display PROGRAMS ON. The ENTER key LED illuminates when the setting default “PROGRAMS OFF” is entered. This setting is stored in EEROM when the unit is not in use.

Press the CLEAR/PAUSE key to return to DIAGNOSTICS STATE 14 or press the START/ENTER key to advance to DIAGNOSTICS STATE 16.



To change language settings, press the UP ARROW to display the next language in the list. Press the DOWN ARROW to display the previous language in the list. The ENTER key LED will illuminate to indicate when the language default is set to ENGLISH. This setting is stored in EEROM when the unit is not in use.

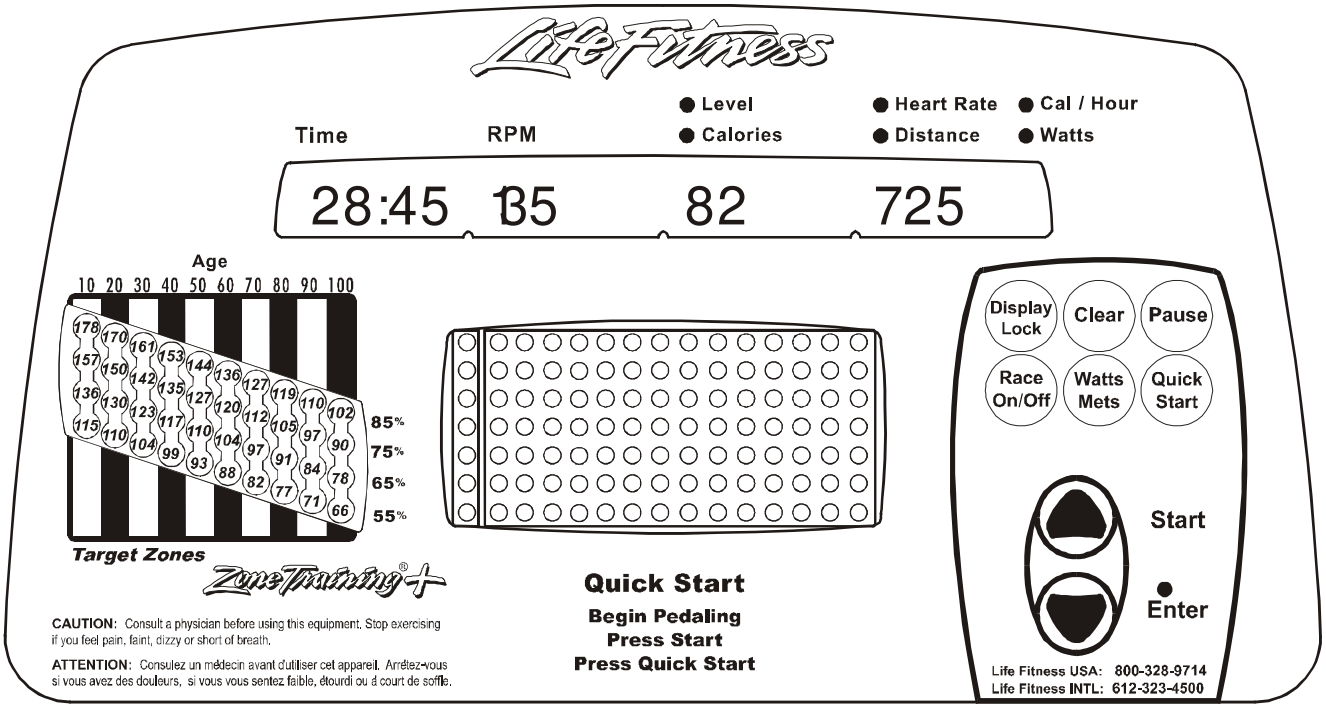
Press the CLEAR/PAUSE key to return to DIAGNOSTICS STATE 15 or press the START/ENTER key to advance to DIAGNOSTICS STATE 17.



Test the EEPROM address locations by pressing the DOWN arrow key. The address locations will scroll through the display showing current default settings.

The diagnostic state tests the Display Console EEPROM by reading, writing, and replacing all used locations in the Display Console EEPROM. The EEPROM location being tested will appear in the display message center. If there is an error, the bad location will be displayed. The following information can be seen: TESTING - XX, EEPROM TESTED GOOD, and EEPROM BAD AT XX.

Press the CLEAR/PAUSE key to return to DIAGNOSTICS STATE 16 or press the START/ENTER key to advance to DIAGNOSTICS STATE 18.



The data displayed is only a representation of unit settings for photographic purposes only.

To return to a previous DIAGNOSTIC STATE or return to the User Display, press the CLEAR/PAUSE key until desired field is reached.

Section II

NOTES:

SECTION III

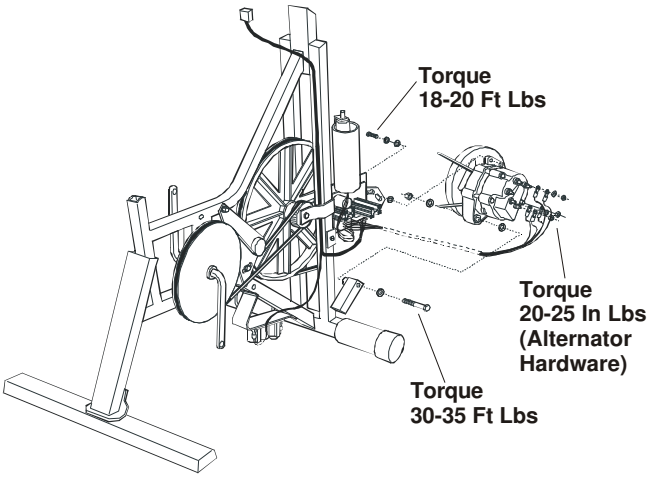
How To...
SERVICE AND REPAIR GUIDES

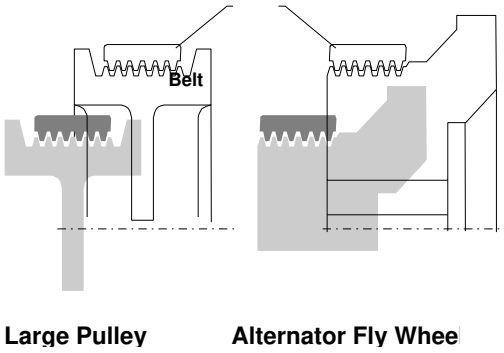
How To... REPLACE THE ALTERNATOR

Tools Required: Phillips screwdriver and wrench set

REMOVAL AND INSTALLATION

1. Remove the Shroud Covers. Refer to "How To..." in this section.
2. Disconnect the wires from the back of the alternator tagging there locations.
3. Using a 1/2 inch wrench, loosen and remove the Alternator Adjustment Bolt.
4. Using two 3/4 inch wrenches, loosen the Alternator Pivot Bolt and Locknut.
5. Push the Alternator forward to relieve the belt tension, then loop the Belt around the small Flywheel Shaft. Once the Belt is free, temporarily set it on top of the Pulley to keep it out of the way.
6. Remove the Pivot Bolt, Washers(2), and Nut from the ALTERNATOR.
7. Remove the Alternator and install the new Alternator in reverse order making sure center it on the pulleys. See illustration.
8. Adjust belt tension between 60-70 lbs torque with 1/4 inch deflection.

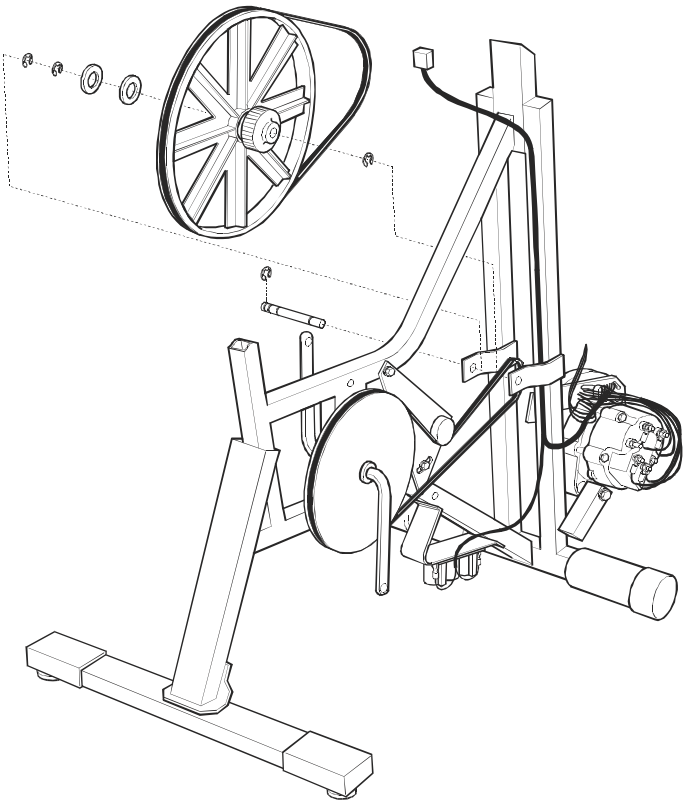




How To... REPLACE THE ALTERNATOR BELT

Tools Required: Wrench set, long nose pliers, screwdrivers, E-ring tool, center punch, and hammer

REMOVAL AND INSTALLATION



1. Remove the Shroud Covers. Refer to “How To...” in this section.

2. Remove the Drive Belt. Refer to “How to.. in this section.

3. Using a 1/2 inch wrench, loosen the Alternator Adjustment Bolt.

4. Using two 3/4 inch wrenches, loosen the Alternator Pivot Bolt and Locknut.

5. Push the Alternator forward to relieve the belt tension, then loop the Belt around the small Flywheel Shaft. Once the Belt is free, temporarily set it on top of the Pulley to keep it out of the way.

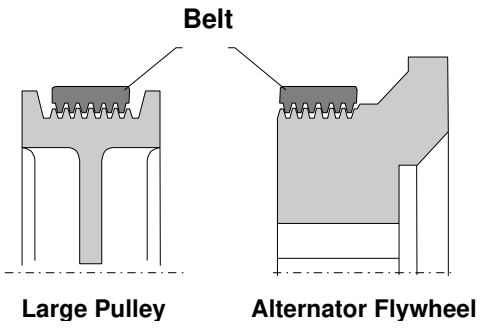
6. Remove three(3) Flat Inner E-Rings and the Outer E-Ring using two screwdrivers, long nose pliers, or E-Ring tool.

7. From the Belt side, use a center punch and a small hammer to tap out the Shaft from the Pulley Bracket.

8. Pull the Pulley forward and out of the bike frame and remove the belt.

9. Install new belt in reverse order. Make sure to center on pulleys.

10. Adjust the alternator belt tension between 60-70 lbs torque with 1/4 inch deflection.

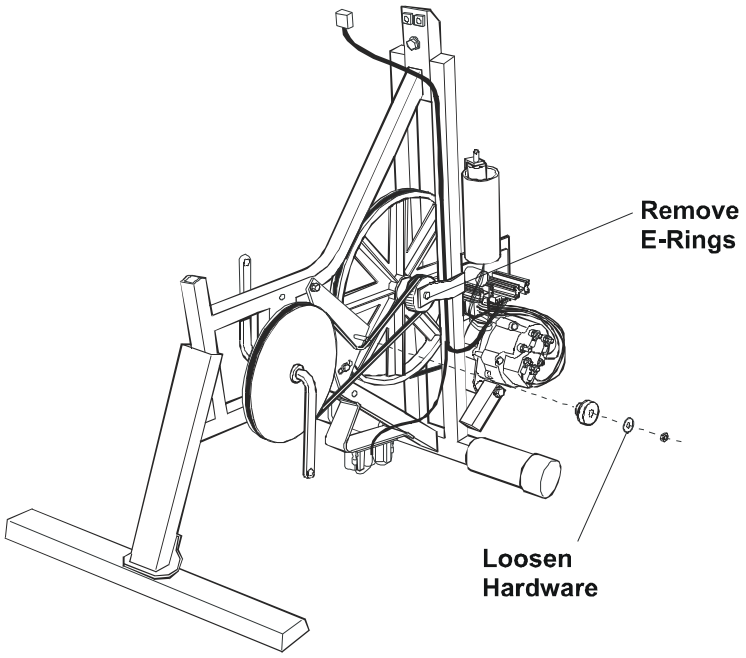


How To... REPLACE THE DRIVE BELT

Tools Required: Standard screwdrivers, long-nose pliers or E-ring tool

REMOVAL AND INSTALLATION

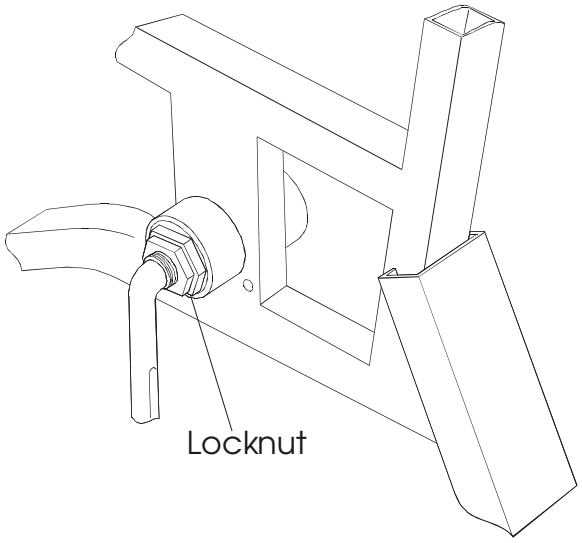
1. Remove the Shroud Covers. Refer to "How To...." in this section.
2. Remove the Alternator Belt. See "How To…." in this section.
3. Loosen the hex bolt on the bracket assembly to loosen the belt.
4. Remove the three Flat Inner E-Rings and the Outer E-Ring using two screwdrivers, long nose pliers, or E-Ring tool.
5. From the Belt side, use a center punch and a small hammer to tap out the Shaft from the Pulley Bracket.
6. Pull the Pulley forward and out of the bike frame and remove the Belt.
7. Reassembly is the reverse of removal.



How To... REPLACE THE CRANKARM AND BEARINGS

Tools Required: Crankarm nut wrench (available from Life Fitness), ft lbs torque wrench, screwdriver, hex key set , and clean rag

REMOVAL AND INSTALLATION



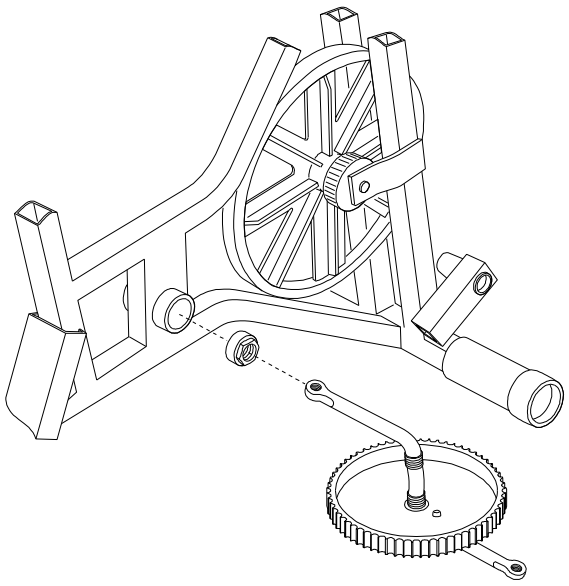
1. Remove the exercise bike Pedals and Shroud Covers. See How To… in this section.

2. Remove the Drive Belt. See How to…in this section.

3. Using a screwdriver, remove the three Sprocket Dust Cover Screws (if equipped). Guide the Sprocket Dust Cover off of the Crank Arm.

4. Bend back the outer tab of the Tab Lock Washer and using a 32mm crankarm wrench, remove the ReverseThreaded Lock Nut.

5. Remove the Tab Lock Washer off the inside Crank Nut on the left side of the bike. Discard the Tab Lockwasher. ***DO NOT REUSE THIS WASHER.***



6. Using a 32mm crankarm wrench, loosen and remove the left side Reverse Threaded Crank Bearing/Nut Assembly and slide it over the Crankarm.

7. Remove the Crankarm from the Crank Tube by tilting it from its vertical position to a horizontal position. Guide the crank arm through the crank tube until it has been completely removed from the right side of the bike.

8. With the 32mm crankarm wrench, remove the right Crank Bearing/Nut Assembly from the crankarm.

9. Slide the right Crank Bearing Nut Assembly over the crankarm. Using the 32mm crankarm wrench, install the Bearing Crank Nut Assembly until it seats against the SPROCKET. Tighten to 20-30 ft lbs torque.

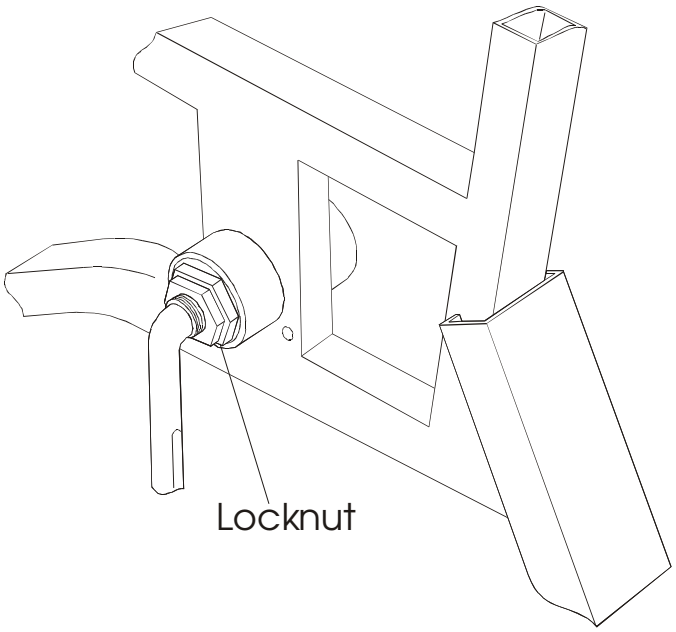
10. Using a clean rag, wipe all accumulated dirt and residue from the Crank Tube.

11. Guide the crankarm through the Crank Tube by tilting it from a horizontal position to a vertical position until it has been completely inserted from the right side of the bike to the left side.

How To... REPLACE THE CRANKARM AND BEARINGS (Cont)

12. Slide the left side Reverse Threaded Crank Bearing/Nut Assembly over the crankarm and align into position. Begin to thread the Crank Bearing/Nut Assembly. Initially tighten the bearing nut to 9-12 ft lbs torque. Then back off the Bearing Crank Nut and retorque to 4 ft lbs.

13. Slide the new Tab Lock Washer over the crankarm with the bent tab facing toward the bike frame. Slide the key of the Tab Lock Washer through the notch and into position against the Crank Bearing/Nut Assembly. Align the flat of the bent tab against the flat of the NUT.



14. Slide the reverse threaded lock nut over the crankarm, thread it into position and with the 32mm crankarm wrench, tighten the Reverse Threaded Lock Nut to 4 ft lbs against the Tab Lock Washer. Remember, this nut is reverse threaded. Bend the straight tab of the Tab Lock Washer so the flat of the tab is against the flat of the Lock Nut, then bend the inner tab of the Tab Lock Washer until it is flush against the flat of the inner Crank Bearing Nut.

15. Re-install the Drive Belt, the Shroud Covers and Pedals.

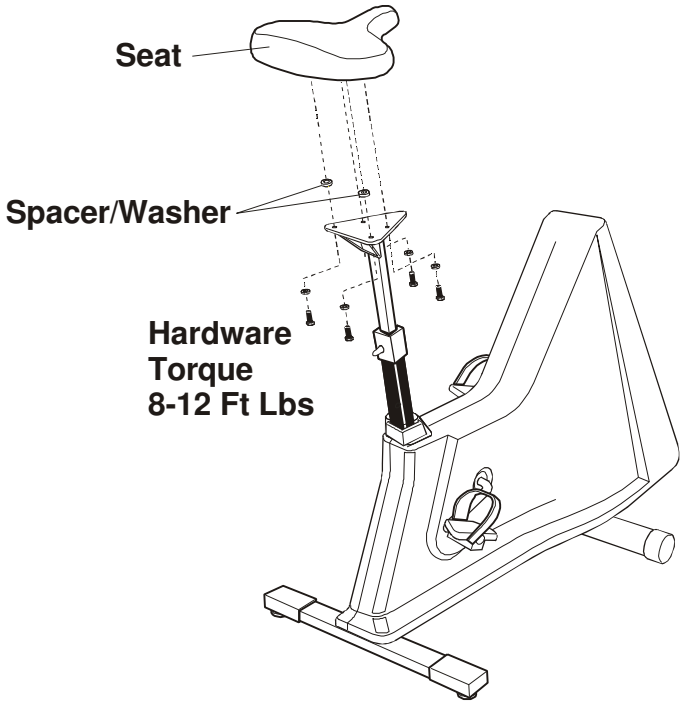
How To... REPLACE THE SEAT ASSEMBLY - MODELS C7i and C9i

Tools Required: Wrench set

REMOVAL AND INSTALLATION

1. Using a ½ inch wrench, remove the four (4) mounting bolts that secure the seat to the frame and discard.

2. Install new seat assembly in reverse order.



How To... REPLACE THE SEAT ASSEMBLY - MODEL C3

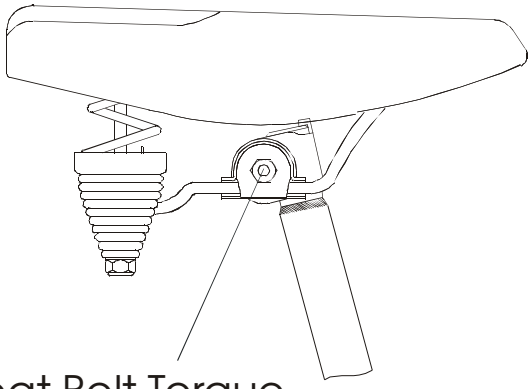
Tools Required: Wrench set

REMOVAL AND INSTALLATION

1. Pull the Seat Pin out of from the Seat Post and bike frame and remove the Seat Post.

2. Install new seat in reverse order of removal. Tighten seat bolt to 14-16 ft lbs.

3. Slide the Seat Post into the bike frame. Adjust the seat post height and insert the Seat Pin.

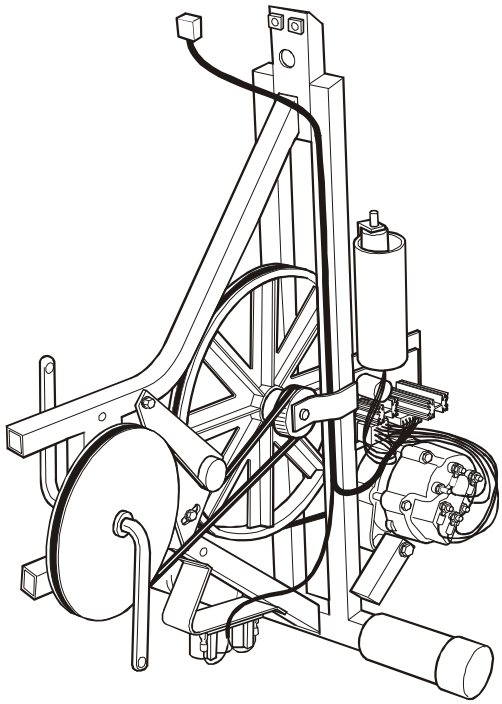


Seat Bolt Torque
14-16 ft lbs

How To... REPLACE THE MAIN WIRE HARNESS

Tools Required: Wrench set, side cutters, screwdriver

REMOVAL AND INSTALLATION



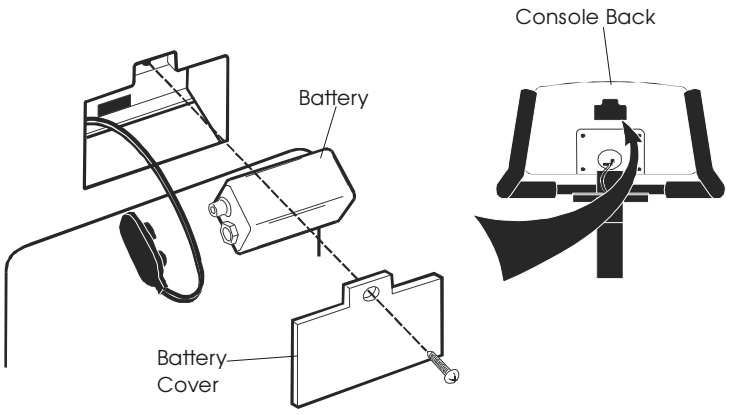
1. Remove the Side Housings. See How To....in this section.
2. Using side cutters, cut off the Cable Ties.
3. Disconnect the wires from the back of the alternator tagging there locations.
4. Disconnect the BLACK (neg) wire from the negative (-) BATTERY post then, the RED (pos) wire from the postive (+) post.
5. Disconnect the 11-Pin Connector at P1, 5-Pin Connector at P3, and 12-Pin Connector at P2 on the Alternator Control Board.
6. Remove the WIRE HARNESS from the FRAME.
7. Install new wire harness in reverse order.

How To... REPLACE THE BATTERY

Tools Required: Standard screwdriver

REMOVAL AND INSTALLATION

1. Remove the Battery door on the on the rear of the Display Console.
2. Remove the screw at the top of the battery cover and remove the cover.
3. Remove and discard the old battery.
4. Install new battery and secure battery cover making sure not to pitch wire.

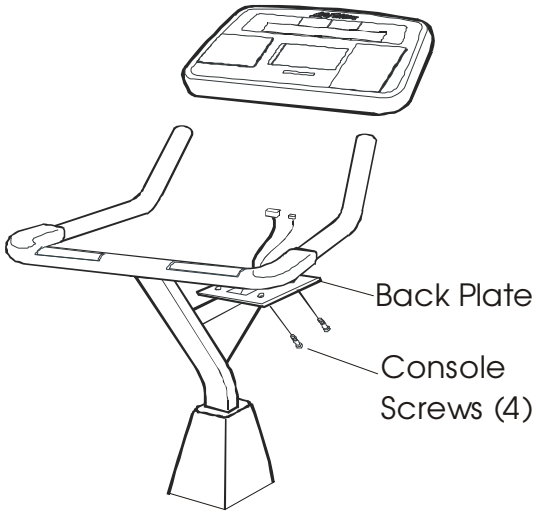


How To... REPLACE THE DISPLAY CONSOLE

Tools Required: Phillips screwdriver

REMOVAL AND INSTALLATION

1. Using a Phillips screwdriver, remove four(4) screws from the Back Plate.
2. Disconnect Connectors from the back of the Display Console.
3. Remove Display Console and discard.
4. Install new Display Console in reverse order.



How To... REPLACE THE ALTERNATOR CONTROL BOARD

Tools Required: Standard screwdriver

REMOVAL AND INSTALLATION

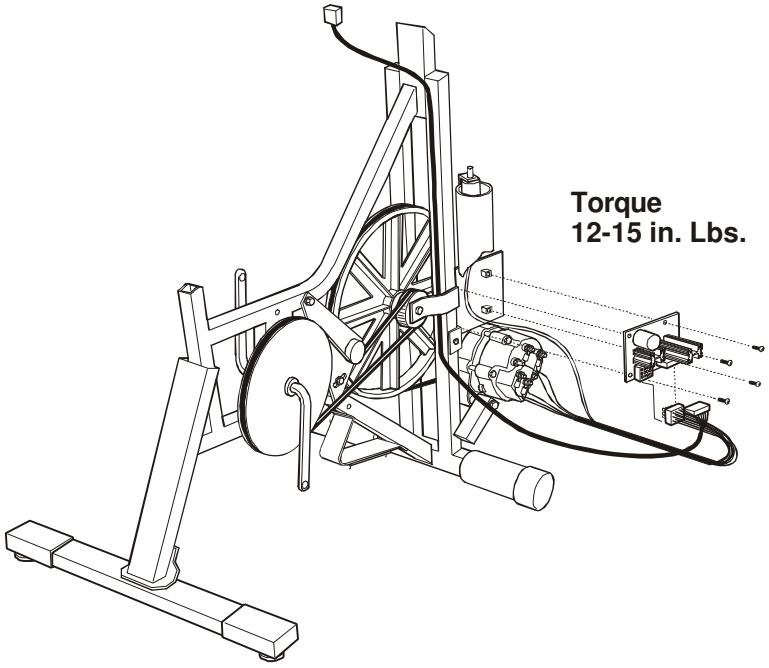
Remove the Side Housing. See How To...in this section.

Disconnect WIRE HARNESS from from the Alternator Control Board.

Using a screwdriver, remove the four(4) Mounting Screws from the Alternator Control Board.

Remove the Alternator Control Board.

Install new Alternator Control Board in reverse order. Torque Mounting Screws 12-15 in lbs.



How To... REPLACE THE FOOT STRAP

Tools Required: None

REMOVAL AND INSTALLATION

1. Remove worn Foot Straps and discard.

2. Install outside of Strap with the slit on outside knob of Pedal. Pull Strap up to lock secure.

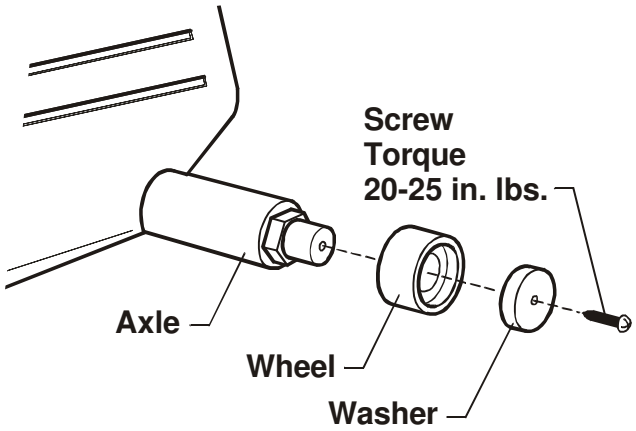
3. Insert the inside Strap with the slit on inside knob of Pedal. Pull the Strap up to secure.

How To... REPLACE THE FRONT WHEEL

Tools Required: Phillips screwdriver

REMOVAL AND INSTALLATION

1. Using a Phillips screwdriver, remove two screws and washers from the Wheel.
2. Remove the Wheel and discard.
3. Install new Wheel in reverse direction and torque mounting screw 20-25 in lbs.

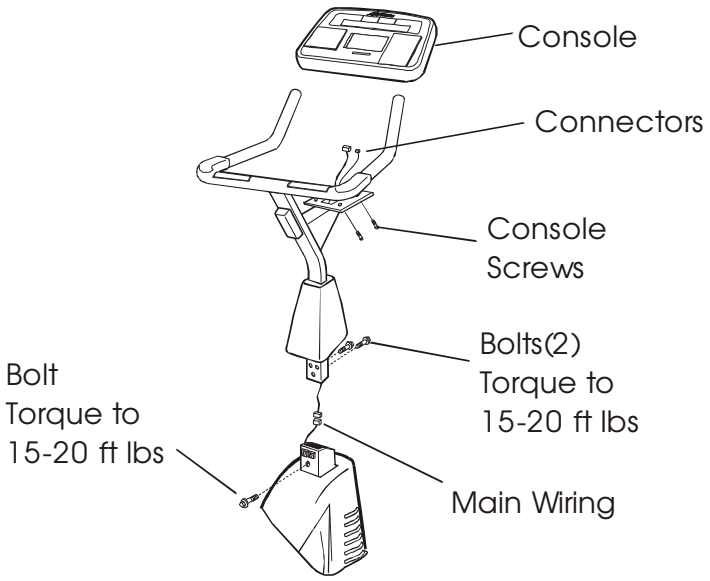


How To... REPLACE THE HANDLEBAR ASSEMBLY

Tools Required: 1/2 inch and Phillips screwdriver

REMOVAL AND INSTALLATION

1. Remove Display Console. See How To...in this section.
2. Using a 1/2 inch wrench, remove the Handlebar Bolts(3).
3. Lift up the Handlebar Assemby enough to disconnect main wiring harness, then remove the Handlebar Assembly.
4. Remove the Main Wiring Harness from the old Handlebar Assembly and discard.
5. Reinstall Wiring Harness into new Handlebar Assembly and install new Handlebar Assembly in reverse order.



Lifecycle C3, C7i, C9i Upright Exercise Bikes

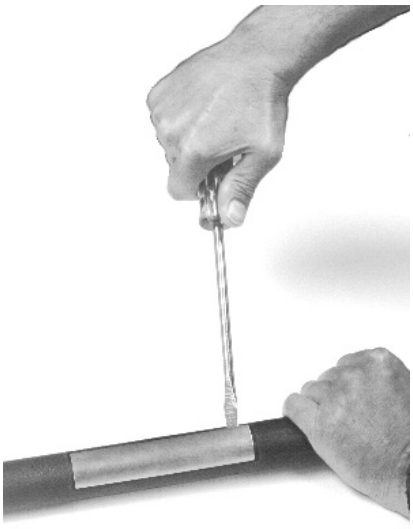
How To... REPLACE THE DIGITAL HEART RATE SENSORS

Tools Required: Phillips screwdriver, standard screwdriver, 5/64” hex key wrench

NOTE: The kit you have received will come equipped with either 5/64” hex key button head screws or Phillips head pan screws. Either can be used for sensor replacement procedures on all models of Life Fitness exercise equipment equipped with Lifepulse digital heart rate sensors. The treadmill handlebar shown in the photographs are for demonstration purposes only. Replacement procedures as listed will remain the same for all applications. ALWAYS REPLACE BOTH SETS OF SENSORS PROVIDED IN THE KIT.

Removing the existing Lifepulse digital heart rate sensors:

STEP 1
Using a standard flat screwdriver, pry off the stainless steel sensor furthest away from you as if you were the user gripping the Lifepulse heart rate monitoring sensors (if screw access holes are already provided in the sensor you wish to replace, simply remove the two screws and continue to Step 2). This will be the sensor on which your fingertips rest during use. This sensor will be referred to as the ***“ground sensor”*** (black or green wire) hereafter in these instructions. The sensor closest to the user, on which the palm rests, will be referred to as the ***“signal output sensor”*** (red or white wire)***.***



STEP 2
Pull the ***ground sensor*** gently away from the molded plastic housing, to which it was attached, to reveal a wire harness (black or green wire) with a Faston connector attached to the back of the sensor. Unplug the Faston connector from the ***ground sensor***.

STEP 3
Loosen and remove the two screws securing the two sensor molded plastic housings to each other on the assembly. Lift the molded plastic housings away from each other and unplug the Faston connector attached to the back of the ***signal output sensor*** (red or white wire).

Installing the new Lifepulse digital heart rate sensors:

STEP 4
Plug the Faston connector (red or white wire) to the back of the new, pre-assembled ***signal output sensor*** assembly (this will be the assembly without the screw access holes in the sensor) and locate it into position. This sensor will be the sensor on which the palm rests during use.

STEP 5
Plug the Faston connector (black or green wire) to the back of the new, pre-assembled ***ground sensor*** assembly (this will be the assembly with the screw access holes in the sensor) and locate it into position. This is the sensor on which the fingertips rest during use.

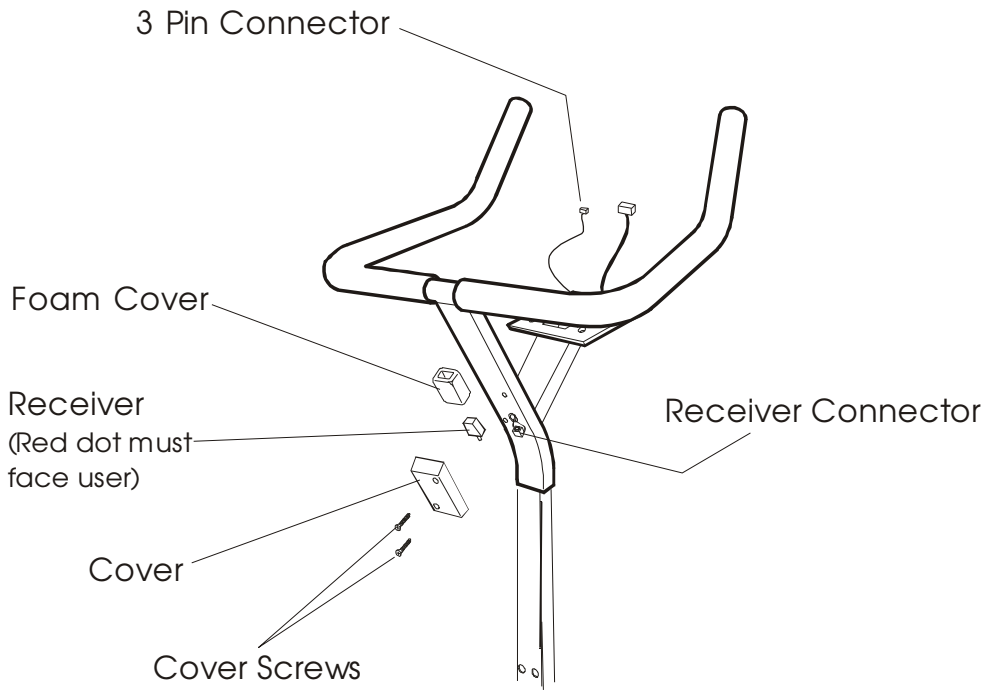
STEP 6
Install the two screws through the access holes in the ***ground sensor*** and torque to 5 - 7 in lbs.

How To... REPLACE THE TELEMETRY RECEIVER

Tools Required: Screwdriver and Phillips screwdriver

REMOVAL AND INSTALLATION

1. Remove the DISPLAY CONSOLE. SEE HOW TO…in this section.
2. Remove the under HOUSING. Refer to SEE HOW TO…in this section.
3. Remove the decal located on the front of the telemetry housing with a flat head screwdriver.
4. Using your Phillips head screwdriver loosen the two screws and remove the cover.
5. Pull the receiver out of the jack and replace with a new RECEIVER.
6. Reassemble in the reverse order.



How To... REPLACE SIDE SHROUDS

Tools Required: Phillips screwdriver

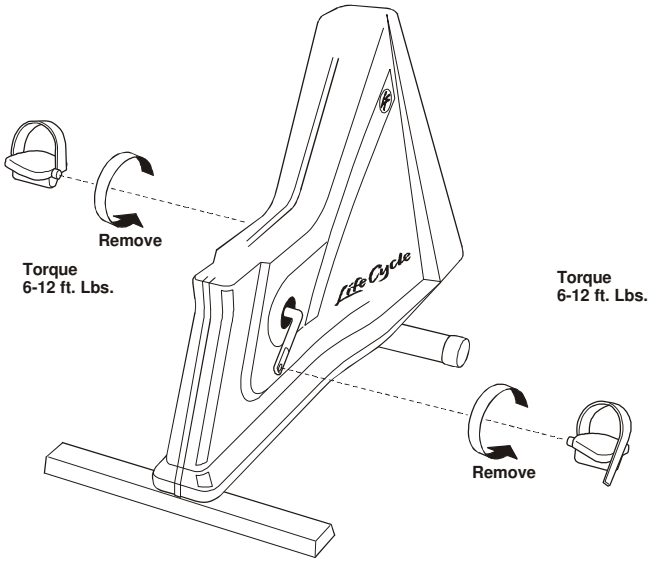
REMOVAL AND INSTALLATION

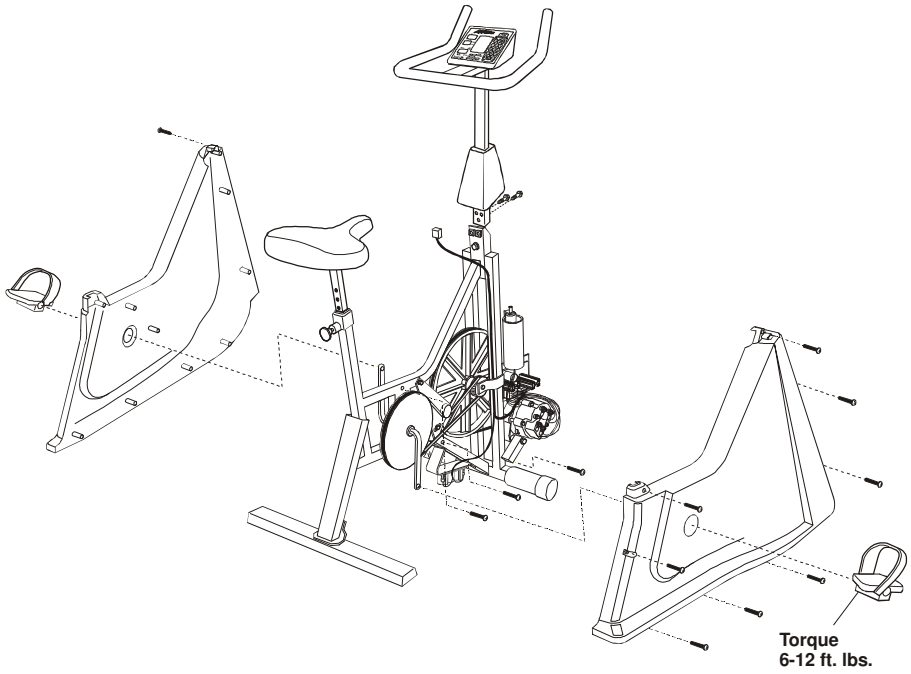
1. Using a 5/8 inch open end wrench, turn the Left Pedal bolt clockwise to remove and the Right Pedal counterclockwise.

2. Using a Phillips screwdriver, remove nine(9) screws from the outer Right Shroud Cover. Position the right side of the Crankarm at the 2 o'clock position and lift the Right Shroud Cover off the Crankarm.

3. From inside the Left Shroud Cover, remove three(3) inner screws. Position the left side of the Crankarm down at the 4 o'clock position and lift the Left Shroud Cover off the Crankarm.

4. Install new Shroud Covers in reverse order.





Section III

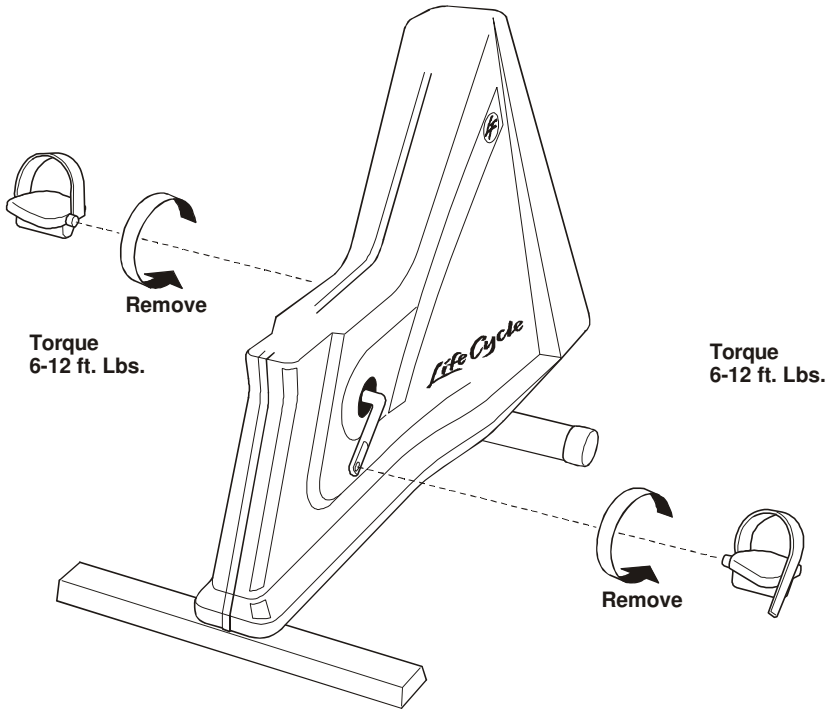
How To... REPLACE THE PEDALS

Tools Required: 5/8 inch open end wrench

REMOVAL AND INSTALLATION

1. Using a 5/8 inch open end wrench, turn the Left Pedal bolt clockwise to remove and the Right Pedal counterclockwise.

2. Install new Pedals in reverse order.



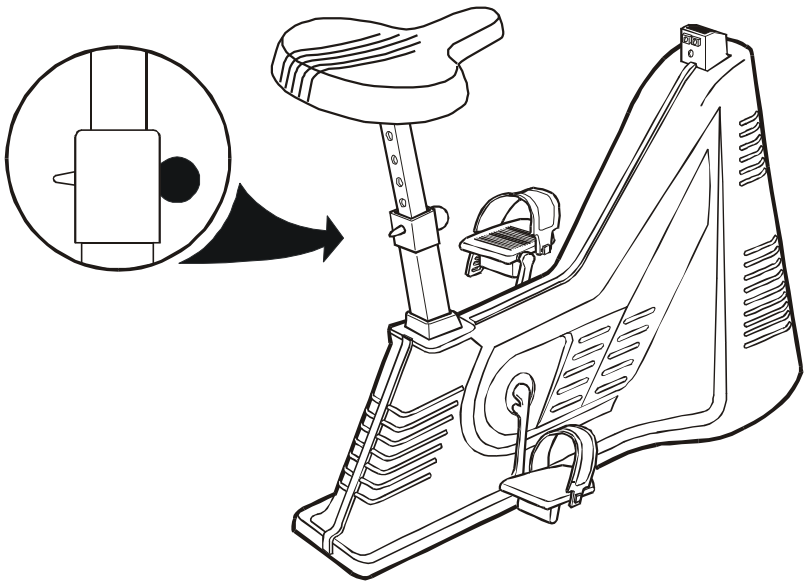
How To... REPLACE THE SEAT PIN

Tools Required: none

REMOVAL AND INSTALLATION

1. Remove Seat Pin from Seat Post and discard.

2. Install new Seat Pin.

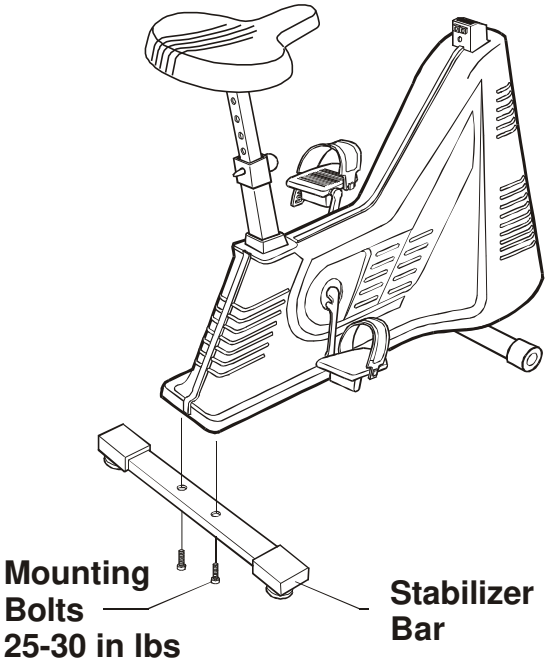


How To... REPLACE THE STABILIZER BAR

Tools Required: 1/2 inch wrench

INSTALLATION AND REMOVAL

1. Support rear of bike off the ground in order to access the Stabilizer Bolts.
2. Using a 1/2" wrench, remove the two(2) Bolts from the bottom of the Stabilizer Bar and remove the Stabilizer.
3. Install the new Stabilizer Bar and tighten bolts 25-30 in lbs. Make sure that the stabilizer bar is flush against the frame.
4. Adjust Levelers to stabilize bike.



NOTES:

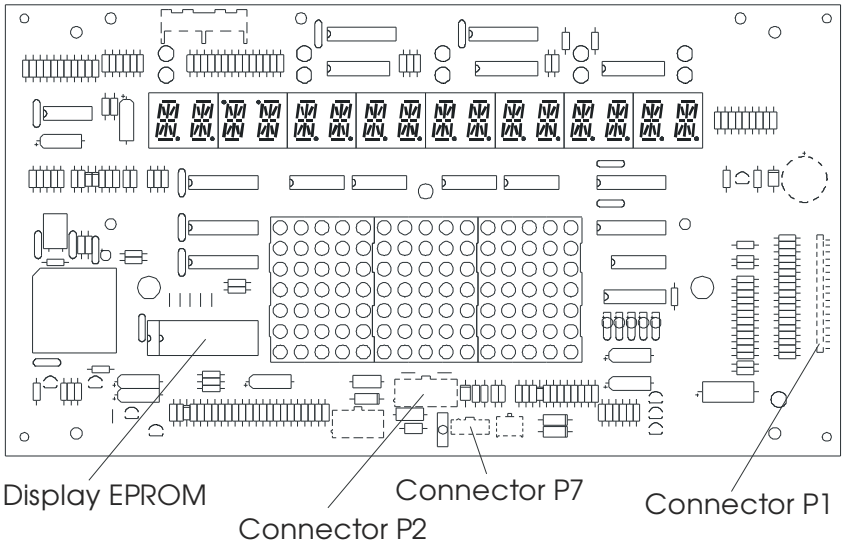
SECTION IV

ELECTRONICS AND WIRING DIAGRAMS

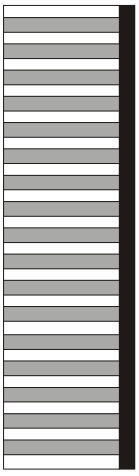
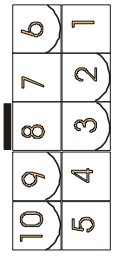
ELECTRONICS OVERVIEW – DISPLAY CONSOLE BOARD - Model C7i

Functional Description

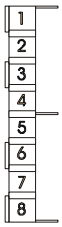
The Display Console Board is designed to work in conjunction with the Alternator Control Board. It reads the keypad input for changes or updates by the user, and refreshes the status LEDs, data display, and profile display matrix.



Connectors and Pin Descriptions

Connector	Location	Pin	Functional Description
P1 is a 17 pin, ribbon connector that connects to the Overlay Board		1	Ground
		2	Strobe
		3	Return
		4	Strobe
		5	Strobe
		6	Return
		7	Strobe
		8	Return
		9	Strobe
		10	Return
		11	Ground
		12	Strobe
		13	Strobe
		14	Return
		15	Strobe
		16	Return
		17	Ground
P2 is a 10 pin connects to the Alternator Control Board		1	VSYS – POWER CONTROL (7-8VDC)
		2	RPM (0-7.5 VDC)
		3	GROUND
		4	LOAD
		5	VBAT – (6 VDC)
		6	ALTREGLO (7-8 VDC)
		7	FLDCMD
		8	START
		9	VBAT – (6VDC)
		10	VBAT – (6VDC)

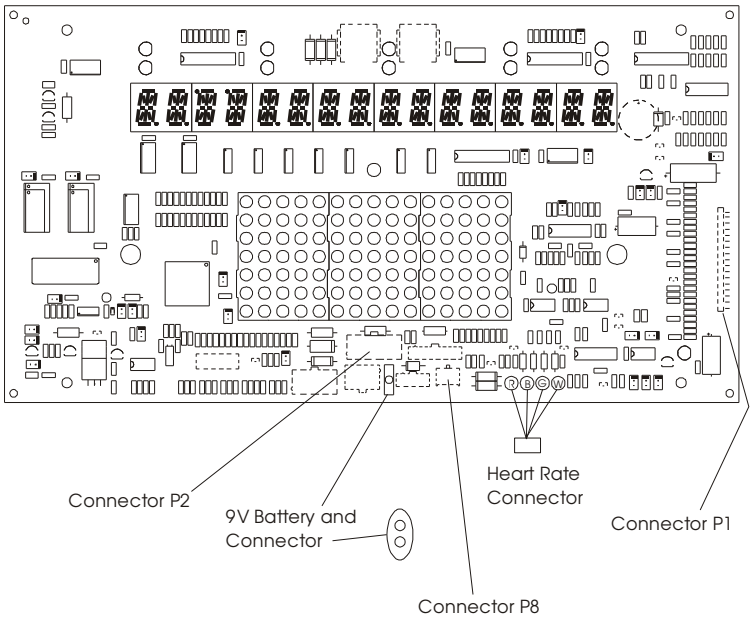
DISPLAY CONSOLE BOARD - Models C7i (Continued)

Connector	Location	Pin	Functional Description
P5 is an 8 pin connector that connects the Life Pulse Board to the Console Board		1	HR-ENABLE (3.8 VDC)
		2	KEY
		3	VSYS (7-8 VDC)
		4	VSYS (7-8 VDC)
		5	GROUND
		6	GROUND
		7	HR-D0 (4.5 VDC)
		8	HR-D1 (4.5 VDC)
P7 is a 3 pin connector that comes from the Polar connector		1	+VCC (5VDC)
		2	POLAR SIGNAL
		3	GROUND

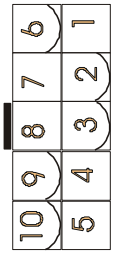
ELECTRONICS OVERVIEW – DISPLAY CONSOLE BOARD - Model C9i

Functional Description

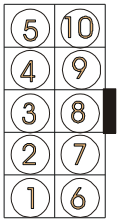
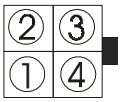
The Display Console Board is designed to work in conjunction with the Alternator Control Board. It reads the keypad input for changes or updates by the user, and refreshes the status LEDs, data display, and profile display matrix.



Connectors and Pin Descriptions

Connector	Location	Pin	Functional Description
P1 is a 17 pin, ribbon connector that connects to the Overlay Board		1	Ground
		2	Strobe
		3	Return
		4	Strobe
		5	Strobe
		6	Return
		7	Strobe
		8	Return
		9	Strobe
		10	Return
		11	Ground
		12	Strobe
		13	Strobe
		14	Return
		15	Strobe
		16	Return
		17	Ground
P2 is a 10 pin connects to the Alternator Control Board		1	VSYS – POWER CONTROL (7-8VDC)
		2	RPM (0-7.5 VDC)
		3	GROUND
		4	LOAD
		5	VBAT – (6 VDC)
		6	ALTREGLO (7-8 VDC)
		7	FLDCMD
		8	START
		9	VBAT – (6VDC)
		10	VBAT – (6VDC)

DISPLAY CONSOLE BOARD - Models C9i (Continued)

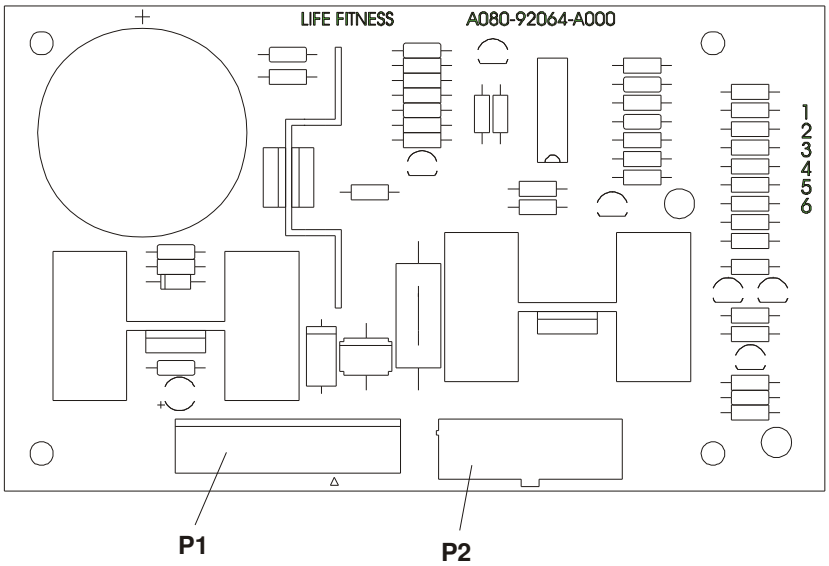
Connector	Location	Pin	Functional Description
P8 is a 10 pin connector that connects to the serial peripheral interface serial communication port		1	MISO - master -in slave-out
		2	MOSI - master-out slave-in
		3	SCK - serial clock
		4	N/U - not used
		5	GND - ground
		6	PCS1 - peripheral chip select 1
		7	PCS2 - peripheral chip select 2
		8	PCS3 - peripheral chip select 3
		9	Open Collector Output
		10	+8 vdc
Heart rate connector		1	Left +
		2	Left -
		3	Right -
		4	Right +

Section IV

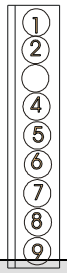
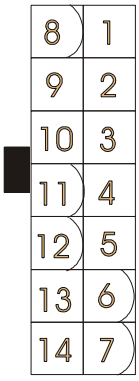
ALTERNATOR CONTROL BOARD - Model C7i ONLY

Functional Description

The Alternator Control Board is designed to regulate the alternator voltage by modulating the field current. It regulates the pass current (RPM signal) from the Alternator to the Console, and the pass current form the alternator to the load resistor while providing supply voltage for the console while charging the system battery.



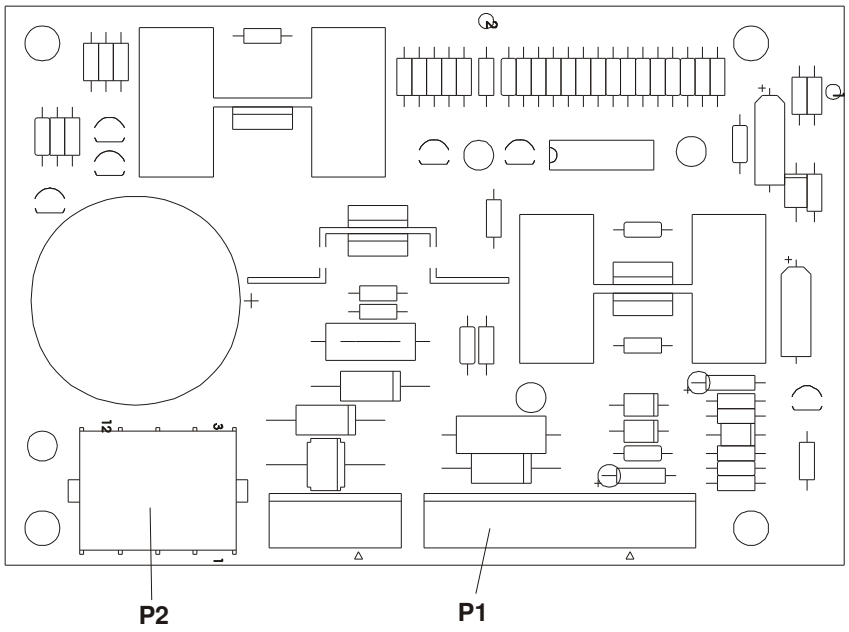
Connectors and Pin Connections

Connector	Location	Pin	Functional Description
P1 is a Molex 9 pin connector that connects to the Console		1	RPM (0-7.5 VDC)
		2	VBAT (9VDC)
		3	NOT USED (BLANK)
		4	LOAD
		5	START
		6	GROUND
		7	GROUND
		8	ALTREGLO (9-11 VDC)
		9	VSYS (7-8 VDC)
P2 is a 14 pin connector that connects to the Alternator and Power Resistor		1	FLD RTN
		2	FIELD (1-4 VDC)
		3	VALT (10 VDC)
		4	LOAD
		5	LOAD
		6	GROUND
		7	GROUND
		8	RPM (0-7.5VDC)
		9	VALT
		10	LOAD
		11	LOAD
		12	GROUND
		13	GROUND
		14	GROUND

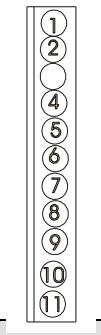
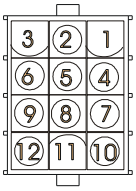
ALTERNATOR CONTROL BOARD - Models C3 and C9i ONLY

Functional Description

The Alternator Control Board is designed to regulate the alternator voltage by modulating the field current. It regulates the pass current (RPM signal) from the Alternator to the Console, and the pass current form the alternator to the load resistor while providing supply voltage for the console while charging the system battery.



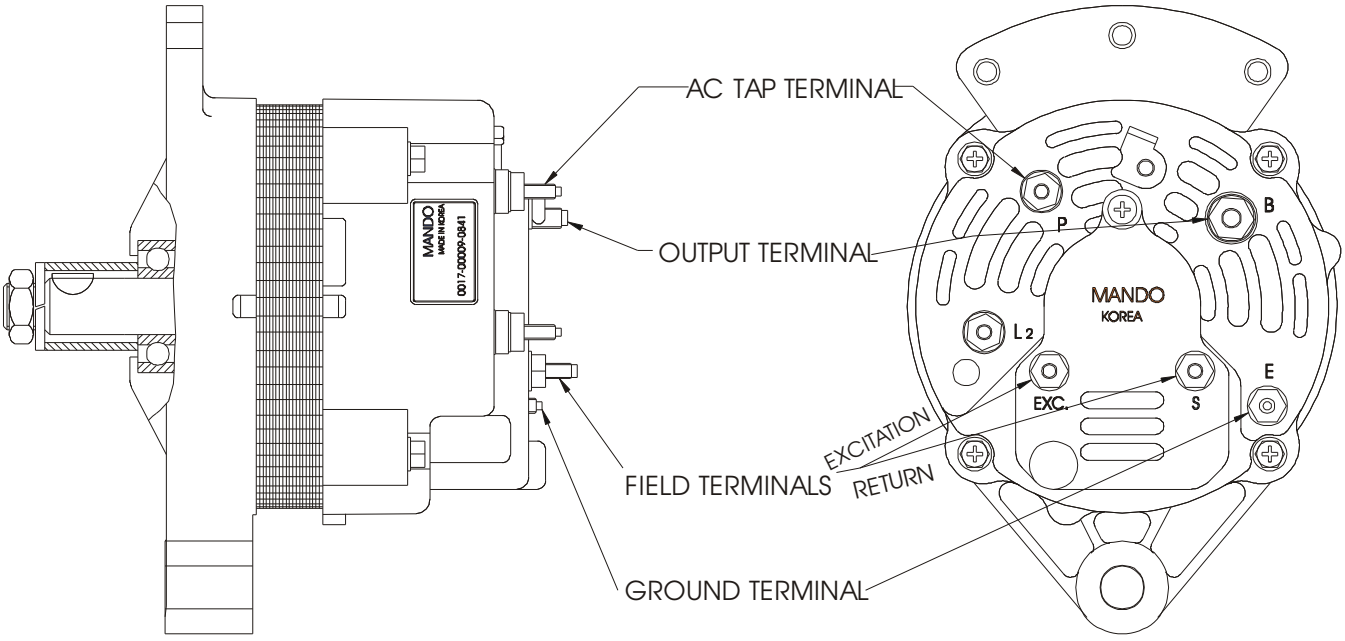
Connectors and Pin Connections

Connector	Location	Pin	Functional Description
P1 is a Molex 11 pin connector that connects to the Console		1	GROUND - BLACK
		2	GROUND – BATTERY
		3	NOT USED (BLANK)
		4	VSYS (7-8VDC)
		5	ALTREGLO (9-11 VDC)
		6	LOADCMD
		7	RPM (0-7.5VDC)
		8	START (7-8VDC)
		9	VBAT – (6VDC)
		10	GROUND – BATTERY
		11	GROUND
P2 is a 12 pin connector that connects to the Alternator and Power Resistor		1	GROUND – ALTERNATOR
		2	GROUND – ALTERNATOR
		3	GROUND – ALTERNATOR
		4	RPM (5VDC)
		5	GROUND – ALTERNATOR
		6	FIELD (1-4 VDC)
		7	LOAD
		8	LOAD
		9	LOAD
		10	VALT (10VDC)
		11	VALT (10VDC)
		12	LOAD

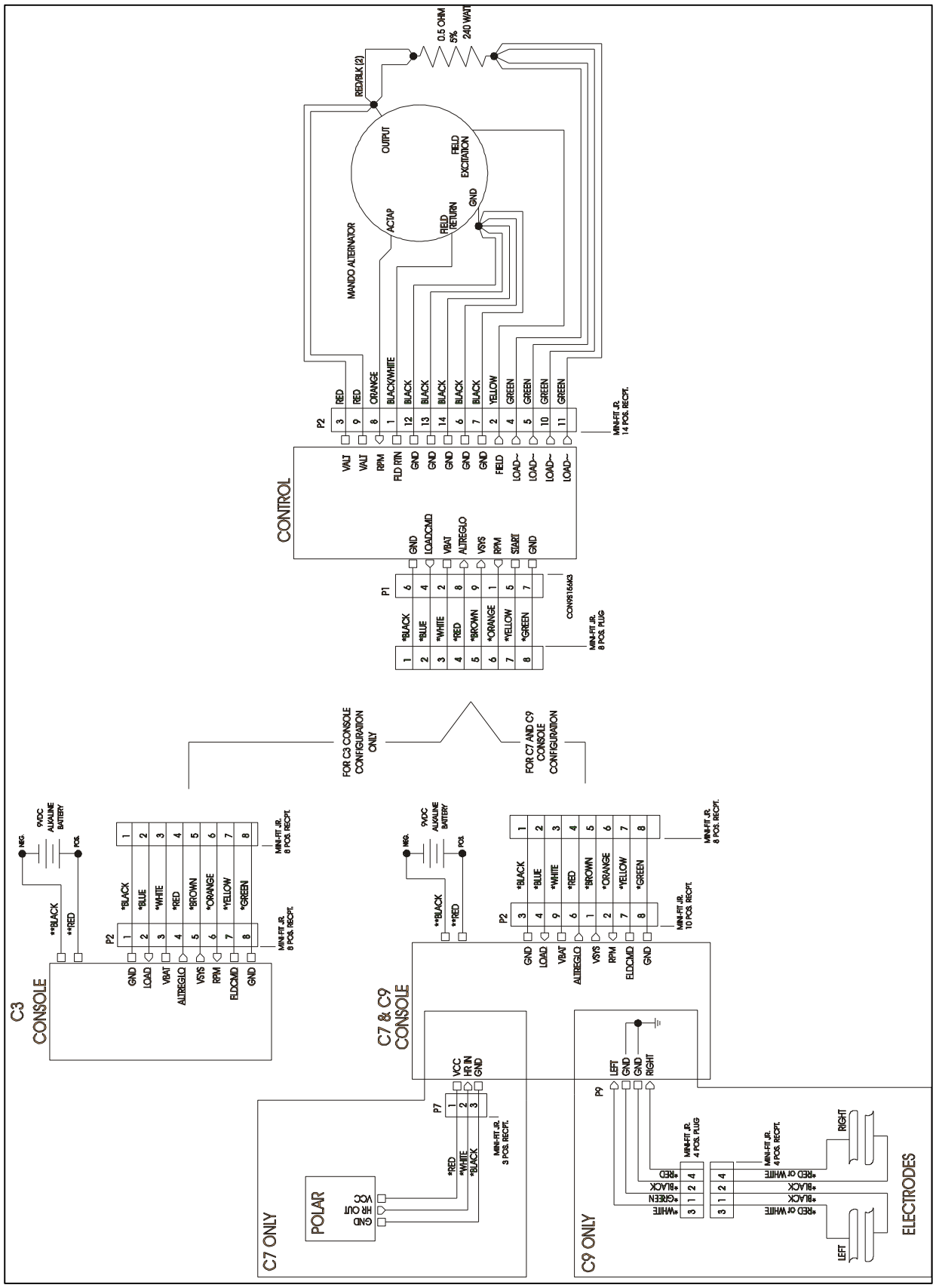
ALTERNATOR

Functional Description

The 12 volt, 35 amp Alternator is designed to provide electrical power to the product, supply load resistance while providing electrical power, and provice the RPM signal from the AC TAP to the Alternator Control Board.



WIRING BLOCK DIAGRAM

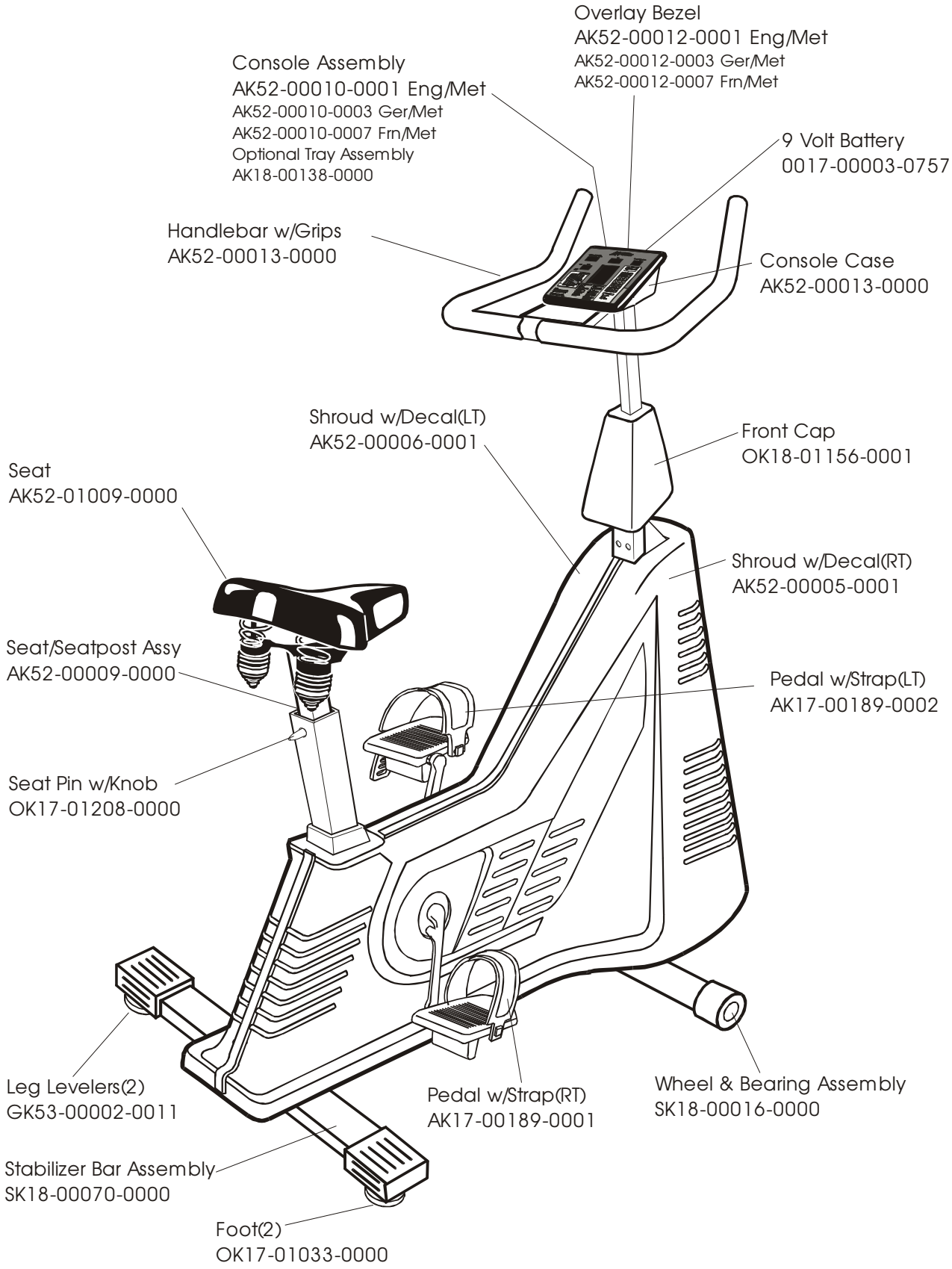


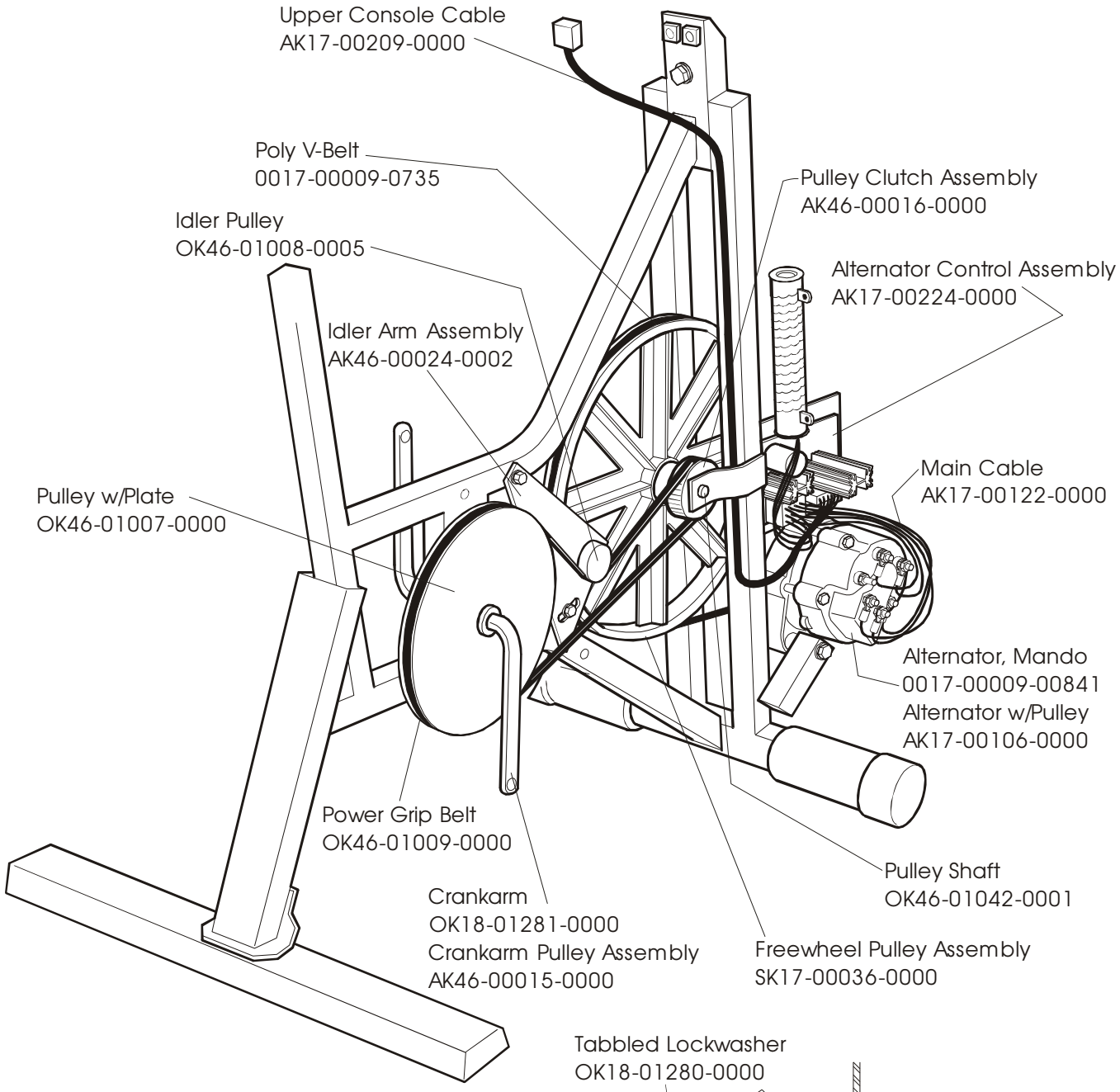
Section IV

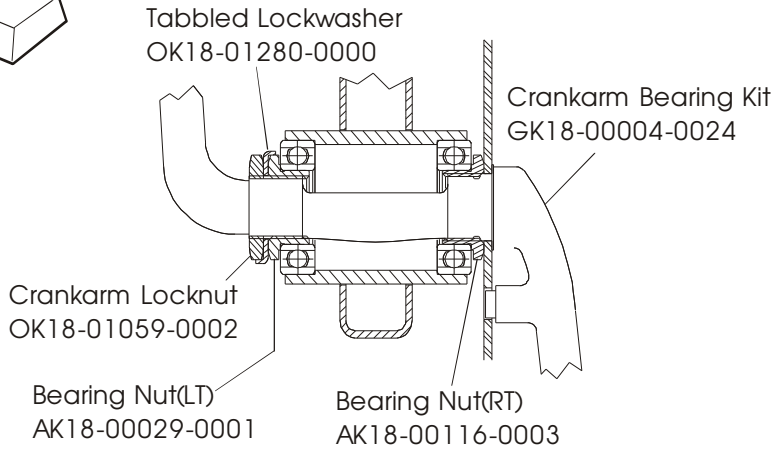
NOTES:

SECTION V

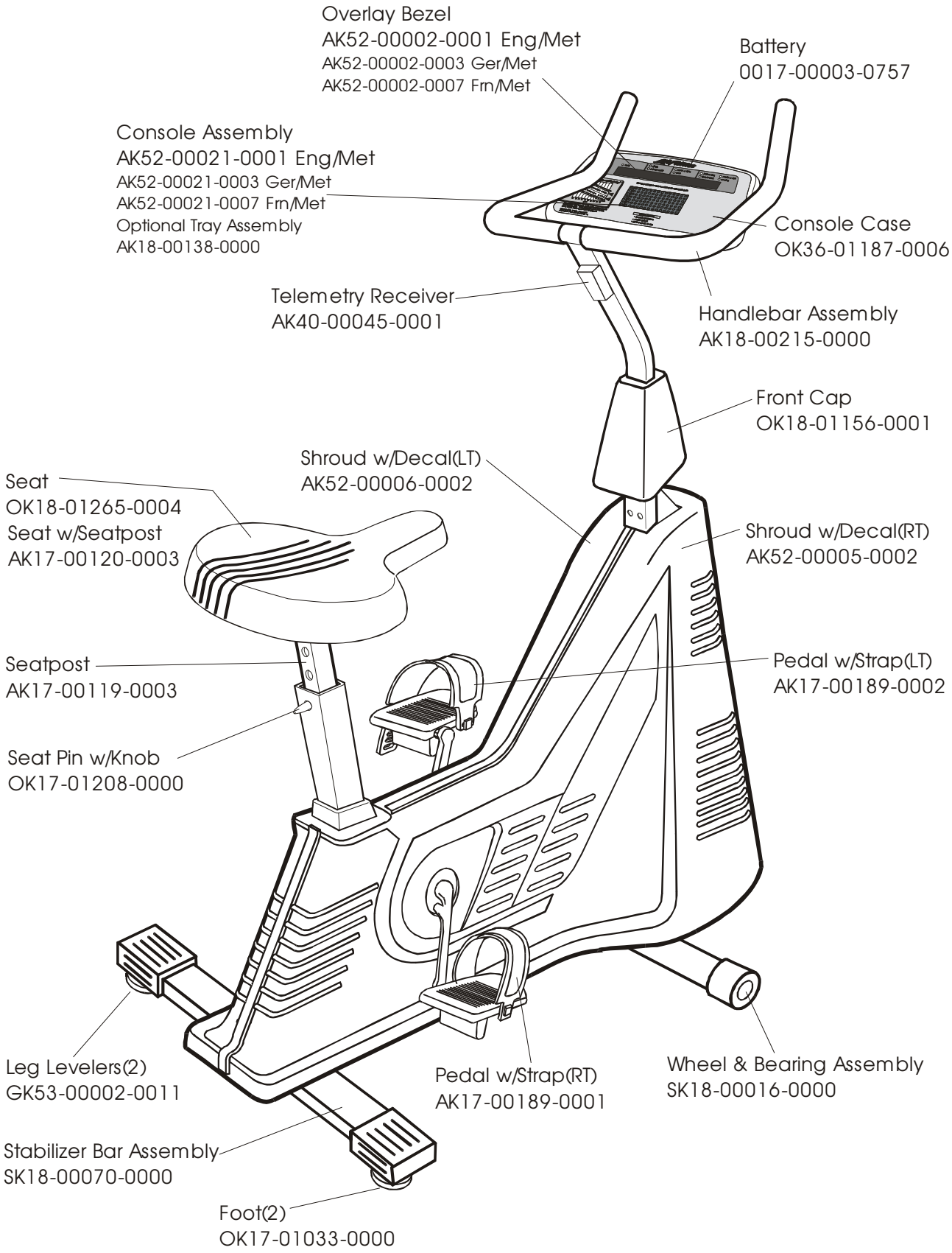
PARTS


Overlay Bezel
AK52-00012-0001 Eng/Met
AK52-00012-0003 Ger/Met
AK52-00012-0007 Frn/Met
Console Assembly
AK52-00010-0001 Eng/Met
AK52-00010-0003 Ger/Met
AK52-00010-0007 Frn/Met
Optional Tray Assembly
AK18-00138-0000
9 Volt Battery
0017-00003-0757
Handlebar w/Grips
AK52-00013-0000
Console Case
AK52-00013-0000
Shroud w/Decal(LT)
AK52-00006-0001
Front Cap
OK18-01156-0001
Seat
AK52-01009-0000
Shroud w/Decal(RT)
AK52-00005-0001
Seat/Seatpost Assy
AK52-00009-0000
Pedal w/Strap(LT)
AK17-00189-0002
Seat Pin w/Knob
OK17-01208-0000
Leg Levelers(2)
GK53-00002-0011
Pedal w/Strap(RT)
AK17-00189-0001
Wheel & Bearing Assembly
SK18-00016-0000
Stabilizer Bar Assembly
SK18-00070-0000
Foot(2)
OK17-01033-0000

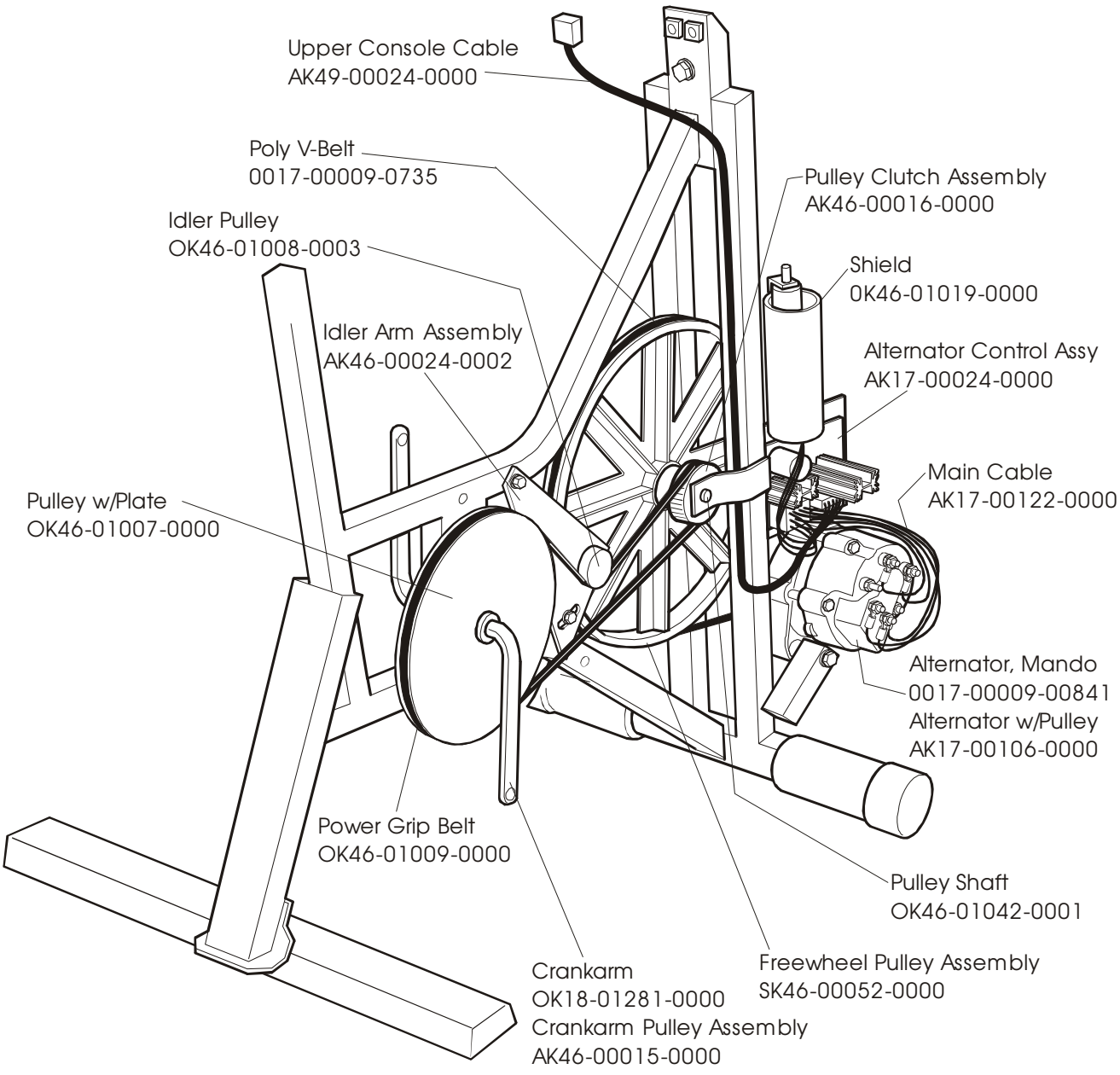

Upper Console Cable
AK17-00209-0000
Poly V-Belt
0017-00009-0735
Idler Pulley
OK46-01008-0005
Idler Arm Assembly
AK46-00024-0002
Pulley w/Plate
OK46-01007-0000
Power Grip Belt
OK46-01009-0000
Crankarm
OK18-01281-0000
Crankarm Pulley Assembly
AK46-00015-0000
Pulley Clutch Assembly
AK46-00016-0000
Alternator Control Assembly
AK17-00224-0000
Main Cable
AK17-00122-0000
Alternator, Mando
0017-00009-00841
Alternator w/Pulley
AK17-00106-0000
Pulley Shaft
OK46-01042-0001
Freewheel Pulley Assembly
SK17-00036-0000

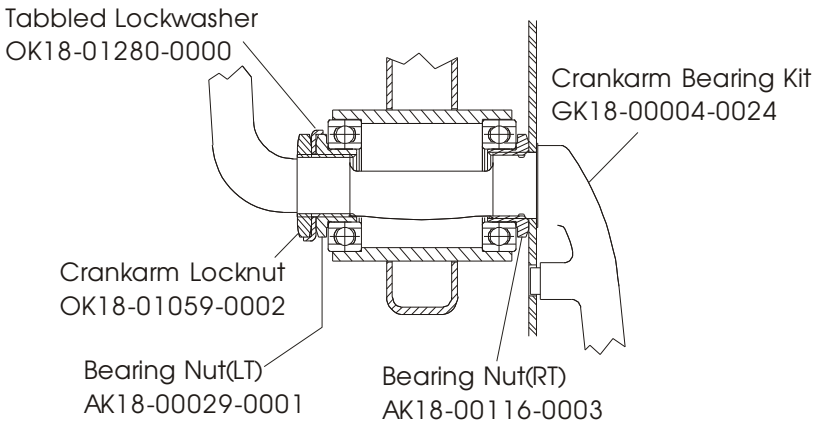

Tabbled Lockwasher
OK18-01280-0000
Crankarm Bearing Kit
GK18-00004-0024
Crankarm Locknut
OK18-01059-0002
Bearing Nut(LT)
AK18-00029-0001
Bearing Nut(RT)
AK18-00116-0003

Section V

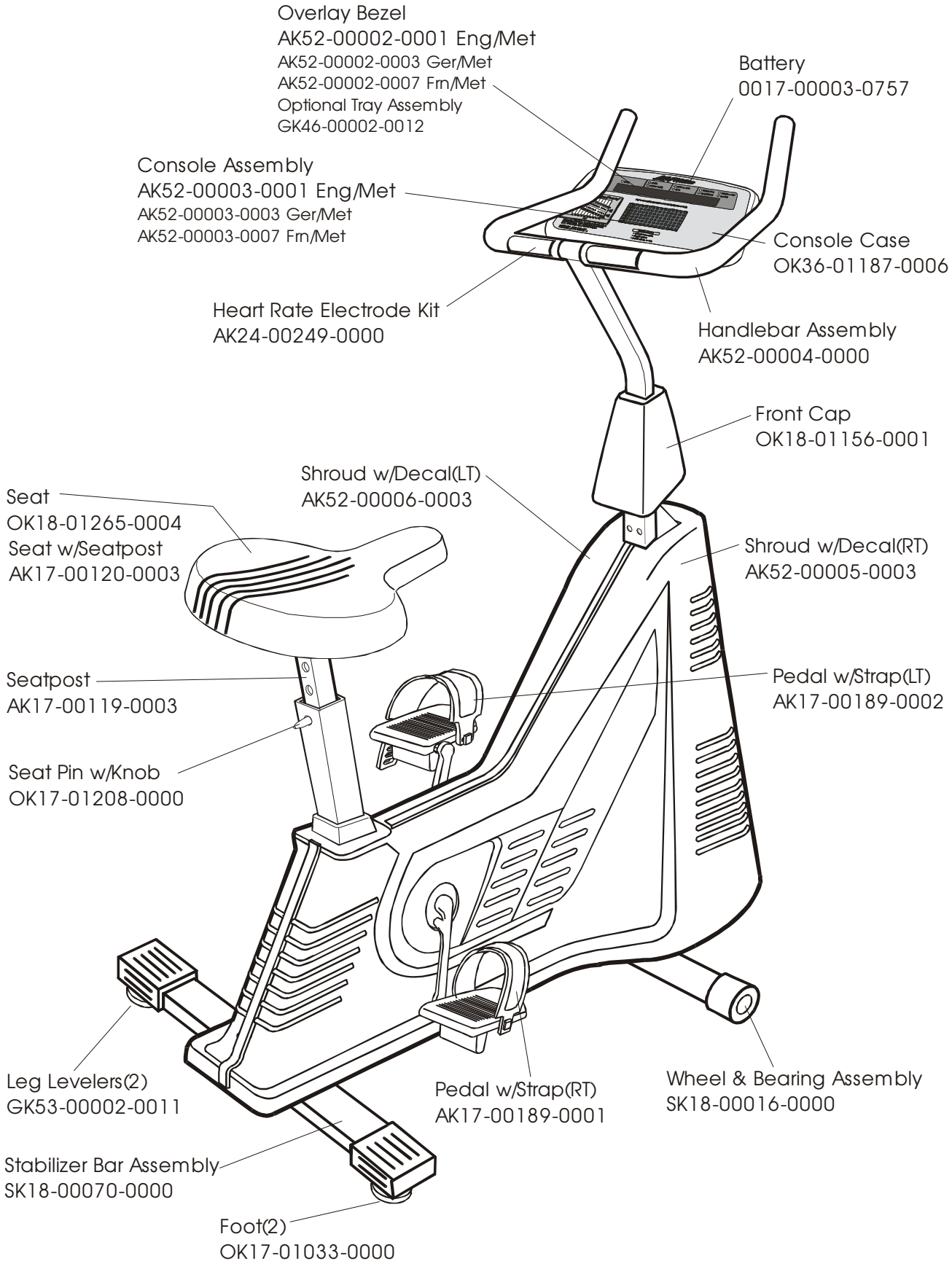

Overlay Bezel
AK52-00002-0001 Eng/Met
AK52-00002-0003 Ger/Met
AK52-00002-0007 Frn/Met
Battery
0017-00003-0757
Console Assembly
AK52-00021-0001 Eng/Met
AK52-00021-0003 Ger/Met
AK52-00021-0007 Frn/Met
Optional Tray Assembly
AK18-00138-0000
Console Case
OK36-01187-0006
Telemetry Receiver
AK40-00045-0001
Handlebar Assembly
AK18-00215-0000
Front Cap
OK18-01156-0001
Shroud w/Decal(LT)
AK52-00006-0002
Seat
OK18-01265-0004
Seat w/Seatpost
AK17-00120-0003
Shroud w/Decal(RT)
AK52-00005-0002
Seatpost
AK17-00119-0003
Pedal w/Strap(LT)
AK17-00189-0002
Seat Pin w/Knob
OK17-01208-0000
Leg Levelers(2)
GK53-00002-0011
Pedal w/Strap(RT)
AK17-00189-0001
Wheel & Bearing Assembly
SK18-00016-0000
Stabilizer Bar Assembly
SK18-00070-0000
Foot(2)
OK17-01033-0000

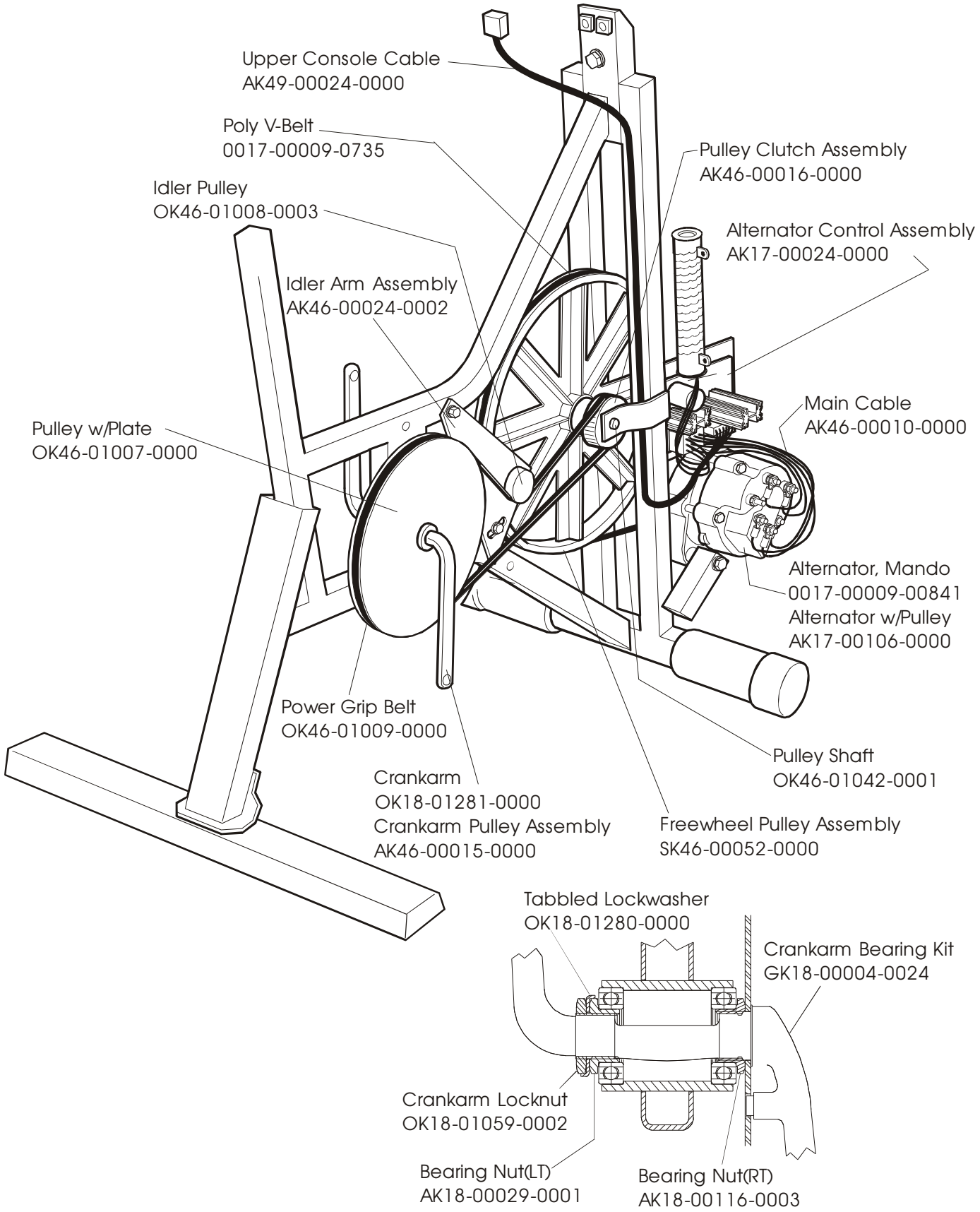
Model C7i – C7-0100-01





Section V


Overlay Bezel
AK52-00002-0001 Eng/Met
AK52-00002-0003 Ger/Met
AK52-00002-0007 Frn/Met
Optional Tray Assembly
GK46-00002-0012
Battery
0017-00003-0757
Console Assembly
AK52-00003-0001 Eng/Met
AK52-00003-0003 Ger/Met
AK52-00003-0007 Frn/Met
Console Case
OK36-01187-0006
Heart Rate Electrode Kit
AK24-00249-0000
Handlebar Assembly
AK52-00004-0000
Front Cap
OK18-01156-0001
Shroud w/Decal(LT)
AK52-00006-0003
Seat
OK18-01265-0004
Seat w/Seatpost
AK17-00120-0003
Shroud w/Decal(RT)
AK52-00005-0003
Seatpost
AK17-00119-0003
Pedal w/Strap(LT)
AK17-00189-0002
Seat Pin w/Knob
OK17-01208-0000
Leg Levelers(2)
GK53-00002-0011
Pedal w/Strap(RT)
AK17-00189-0001
Wheel & Bearing Assembly
SK18-00016-0000
Stabilizer Bar Assembly
SK18-00070-0000
Foot(2)
OK17-01033-0000

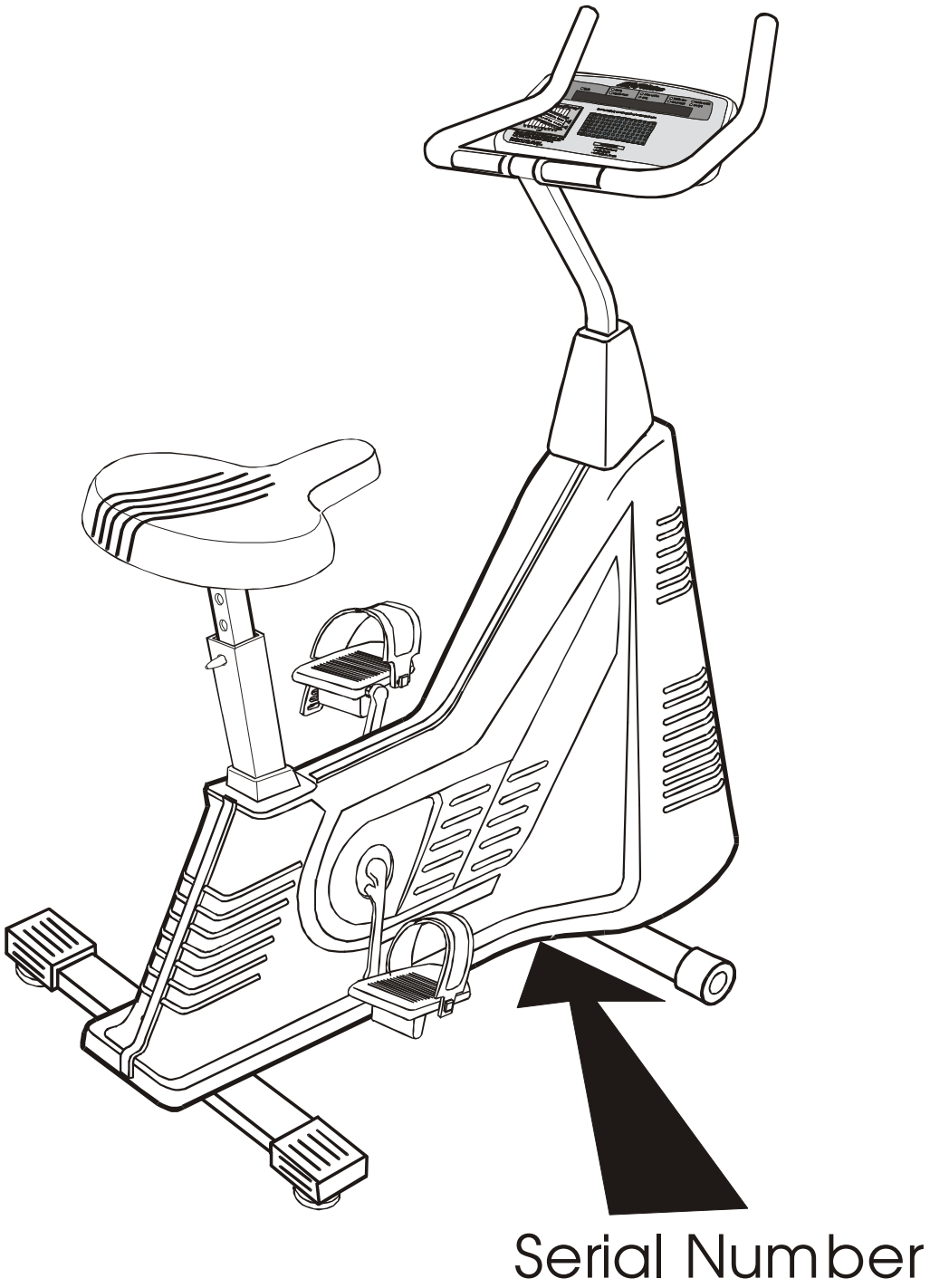

Upper Console Cable
AK49-00024-0000
Poly V-Belt
0017-00009-0735
Idler Pulley
OK46-01008-0003
Idler Arm Assembly
AK46-00024-0002
Pulley w/Plate
OK46-01007-0000
Power Grip Belt
OK46-01009-0000
Crankarm
OK18-01281-0000
Crankarm Pulley Assembly
AK46-00015-0000
Pulley Clutch Assembly
AK46-00016-0000
Alternator Control Assembly
AK17-00024-0000
Main Cable
AK46-00010-0000
Alternator, Mando
0017-00009-00841
Alternator w/Pulley
AK17-00106-0000
Pulley Shaft
OK46-01042-0001
Freewheel Pulley Assembly
SK46-00052-0000
Tabbled Lockwasher
OK18-01280-0000
Crankarm Bearing Kit
GK18-00004-0024
Crankarm Locknut
OK18-01059-0002
Bearing Nut(LT)
AK18-00029-0001
Bearing Nut(RT)
AK18-00116-0003

NOTES:

SECTION VI

MISCELLANEOUS

MODEL IDENTIFICATION and SERIAL NUMBER LOCATION



Preventive Maintenance Schedule

	DAILY	MONTHLY	BI-ANNUALLY
HOUSING			
Inside			Clean
Outside	Clean		
ALTERNATOR CONTROL			
Heatsink			Clean
Connectors			Inspect
Board			Inspect
Belt (Power Grip)		Inspect	
Crank Bearings			Inspect
Pedals		Clean/Inspect	
Freewheel Pulley			Clean/Inspect
Alternator Flywheel			Clean/Inspect
Locking Mechanism		Inspect	
SEAT ASSEMBLY			
Top Surface	Clean		
Rollers		Inspect	
ALTERNATOR BELT			
Tension			Inspect
Wear			Inspect
Lifepulse sensors	Clean		

COMMUNICATING BY FAX

If you would like to submit a parts order, or if you need help troubleshooting a problem, we have included, for your convenience, a FAX form on the following page. Simply make a copy (or copies) of the FAX sheet and fill in the necessary information. You may FAX us at any time, 24 hours a day, to either of the numbers shown. A Life Fitness service representative will process your order, or respond to your problem, as quickly as possible.

CUSTOMER SUPPORT SERVICES

☐ **PARTS ORDER** *(IF BOTH PLEASE INDICATE)* ☐ **SALE**

☐ **PRODUCT TROUBLESHOOTING** ☐ **WARRANTY**

NAME:	CUSTOMER NO:	DATE:
PHONE:	FAX:	CONTACT NAME:

METHOD OF SHIPMENT: ☐ **1 DAY** ☐ **2 DAY** ☐ **GROUND**

PARTS ORDER FORM

ITEM NO.	PART NUMBER	DESCRIPTION	QUANTITY
1			
2			
3			
4			
5			
6			

PRODUCT TROUBLESHOOTING

PRODUCT NAME:	SERIAL NO.
DETAILED DESCRIPTION OF PROBLEM:	
PRODUCT NAME:	SERIAL NO.
DETAILED DESCRIPTION OF PROBLEM:	

TIME RECEIVED:	TIME COMPLETED:	TECHNICIAN NAME:

CUSTOMER SUPPORT SERVICES
14150 Sunfish Lake Blvd.
Ramsey, MN 55303 USA
Telephone: 1-800-328-9714 or 1-612-323-4500
Fax: 1-612-323-4794

NOTES: